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EVAPORATION OF A THICKENED AGENT SIMULANT FROM OAK AND HICKORY LEAVES

AD-A232 136

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RESEARCH DIRECTORATE

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13. ABSTRACT *(Maximum 200 words)*
This study identifies the physical parameters and determines the extent of their influence on the evaporation of the candidate thickened liquid agent simulant diethyl malonate deposited as droplets on oak and hickory leaves. Controlled evaporation/persistency experiments were conducted in a low-speed, open-circuit wind tunnel facility at a constant temperature of 60 °F. In each test, vapor concentrations downstream from an area (4 ft by 1 ft) contaminated by uniform-sized droplets (2 mm diameter) and a contamination density of 30 g/m^2 were continuously monitored with a Miran IA gas analyzer. Two factorial experiments were performed according to a bi-level design of four variables. The four variables treated in this study included liquid viscosity (100/1,000 centipoise), average wind speed (3/11 mph), leaf surface (top/bottom), and leaf type (oak/hickory) in Experiment 1 and leaf condition/age in Experiment 2. An elaborate set of tables is provided; the vapor concentration values downstream from the contaminated area, the residual droplet mass, the cumulative mass recovered as vapor, and the droplet evaporation rate as a function of time. Spread factors of the deposited droplets on the leaf surfaces were determined. Droplet evaporation and persistency behavior are compared with half-life model predictions.

14. SUBJECT TERMS

Simulant	Vegetation	Evaporation
Deposited droplet	Vapor	Persistency
Droplet	Half-life	(continued on page 2)

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Wind tunnel
Diethyl malonate
Viscosity
Wind speed
Vapor recovery
Spread factor
K125
Factorial design
Relative humidity
Northern red oak
Shagbark hickory
Vapor concentration

EXECUTIVE SUMMARY

Studies conducted in recent years have resulted in greater importance being attached to chemical defense against attack by thickened agents of intermediate and low volatilities. If the contaminant is a thickened chemical agent, droplets significantly larger than normal will be deposited on a target area, posing a longer term hazard for liquid contact. Further, the droplets constitute an emitting source for the formation of a secondary vapor cloud. Under some conditions, the hazard from the vapor may outweigh that from the liquid. These effects have been modeled in several ways, but selecting the most appropriate formal model and model improvements has been handicapped by a lack of sufficient experimental data to verify the modeling aspects. One of the critical data gaps pertains to the quantity of vapor that becomes airborne and its rate of evolution from droplets of thickened CW agents deposited on various natural-occurring surfaces and common structural materials.

Phase III of a three-phase research program designed to fill part of this data gap has been completed. Basic experimental information has been obtained to characterize the evaporation and sorption losses of thickened liquid droplets deposited on two leaf surfaces (Northern Red Oak and Shagbark Hickory) under a variety of conditions.

To aid in identifying and clarifying the most critical parameters controlling the persistence and evaporation characteristics of thickened liquid droplets deposited on a leaf surface, a bi-level fractional factorial experimental design was followed. The variables treated included the following:

- Liquid viscosity: 100 and 1,000 centipoise (cP); the liquid simulant was thickened with EA K125 copolymer to achieve the specified zero shear viscosities

- Average wind speed over the droplets: 3 and 11 mph

- Leaf surface: either the bottom or top surface of the leaf was contaminated

- Leaf type: oak and hickory leaves collected from the Edgewood Area of Aberdeen Proving Ground

- Leaf condition: green leaves picked in September, and red/yellow/orange leaves gathered in October.

Two bi-level factorial screening experiments were conducted. In all experiments, the leaves were contaminated with 2 mm diameter droplets of thickened diethyl malonate (DEM) and the air temperature was controlled at 60 °F. The relative humidity (RH) in the experiments was not controlled. The average RH was 42% +/-8% standard deviation (SD). An area of approximately 4 ft^2 (4 ft by 1 ft) was contaminated in each test. The contamination density was 30 g/m^2. A previous study showed that there was no significant difference in droplet evaporative behavior at a contamination density of either 30 g/m^2, or 10 g/m^2 (NATO Standard); therefore, the former was chosen for experimental reasons.

Factorial analysis, as well as analysis of variance (ANOVA), was employed to obtain a clearer understanding of the effects the variables on the evaporation and spreading characteristics of the droplets of thickened DEM deposited on the leaf surface. The following seven droplet evaporation characteristics were studied:

- The percentage of contamination recovered after the 1st, 2d, 3d, and 6th hr from droplets deposited on the leaf surface

- The average droplet evaporation rates (micrograms per minute) based on a 1st, 2d, 3d, and 6th hr after deposition

- The half-life (minutes) of a droplet in the array of droplets deposited on the leaf surface or the time required to recover 50% of the initial (volatile) contaminant

- The average evaporation and recovery rates (micrograms per minute) associated with the half-life of the contaminant

- The total percentage of the contamination recovered as vapor from the droplets deposited on the leaf surface

- The lifetime of the droplet contamination deposited on the leaf surface

- The average evaporation rate (micrograms per minute) over the lifetime of the droplet contamination

In general, the factorial analysis and the ANOVA results are in good agreement. Wind speed is the most dominant factor affecting the amount, the rate of return, and the duration of the 2 mm diameter droplets of thickened DEM deposited on a leaf surface at 60 ^{O}F ambient temperature. The effect produced by wind speed is predominantly a direct effect. The wind speed factor alone can explain most of the total variation (80/88%) in the droplet evaporation characteristics that were studied in the two factorial experiments. Only one exception was found. In Experiment 2, the total percentage of contamination recovered was strongly dependent on the viscosity of the deposited liquid droplet and either the condition or age of the oak leaf.

Differences in droplet weathering on contaminated leafy surfaces at 3 and 11 mph are significant. Initially (0-3 hr), the average droplet evaporation rate of the deposited 2 mm diameter droplets at 3 mph is one-half the evaporation rate of the deposited droplets exposed to 11 mph wind speed. However, after 6 hr, the average droplet evaporation rate at 3 mph is nearly two-thirds the droplet evaporation rate at 11 mph. The difference in lifetime of the deposited droplets at 3 and 11 mph is approximately 10 hr, and there is a 3-hr difference in the half-life of the 2 mm diameter droplets.

The leaf surface (top versus bottom) is the second most dominant factor affecting the evaporation behavior of the deposited DEM droplets. The DEM droplets spread substantially more on the top surfaces of the oak and hickory leaves than on the bottom surfaces. This, in turn, affects the initial droplet evaporation characteristics for times, up to 6 hr (the last

time increment in the analysis), after contamination. However, the long-term yields associated with the droplet contamination, such as the total amount of contamination that evolves and surprisingly the lifetime of the deposited droplets, are not dependent on the leaf surface.

The leaf type (Northern Red Oak versus Shagbark Hickory) has only a minor effect on the evaporation of deposited DEM droplets. The measured differences in evaporation behavior for droplets deposited on the oak and hickory leaves are not considered to be operationally significant.

The condition or age of the oak leaf primarily affects the percentage of the liquid droplet contamination that eventually evolves. However, the final amount of liquid agent that is recovered as vapor from the oak leaf is strongly dependent not only on the condition or age of the leaf, but also on the initial viscosity of the liquid droplet.

The spread factor of a thickened DEM droplet deposited on a leaf surface is affected mainly by the leaf surface and the condition or age of the leaf. The leaf surface (top versus bottom) is the most dominant factor, and surprisingly the difference in spreading of a deposited droplet is greater between the top and bottom surfaces of the leaves investigated than between the leaf types. Liquid droplets spread on the top surface to a greater extent than on the bottom surface of both leaf species tested. The average spread factor for a deposited droplet is estimated to be 2.56 (+/-0.236 SD) on the top surface and 1.88 (+/-0.052 SD) on the bottom surface, for both the oak and hickory leaves.

However, there is also evidence that the condition or age of the leaf affects the spreading of the droplet on the leaf surface. A significant difference was detected in spreading of droplets deposited on the green September oak leaf and the red October oak leaf. This is manifested by the interaction effect between the leaf surface and the leaf condition in Experiment 2. The average spread factor for a droplet deposited on the top surface of a green oak leaf is 2.47 (+/-0.292 SD), whereas the average spread factor on the top surface of a red oak leaf is 1.95 (+/-0.062 SD). However, the average spread factors for the bottom surface of the green and red oak leaves are similar; 1.88 (+/-0.004 SD) and 1.79 (+/-0.052 SD), respectively.

The viscosity of thickened DEM (100/1,000 cP) and the wind speed (3/11 mph) over the ranges tested had no detectable effect on the extent of spreading of a droplet deposited on the oak and hickory leaves.

Perhaps one of the most significant results is that a simple first order mathematical expression is shown to be adequate for representing the disappearance of a thickened liquid agent simulant droplet from contaminated leaf foliage surfaces during the evaporation of the thin liquid film that is formed on the leaf surfaces. Droplet half-life is the key and critical parameter for predicting the evaporation of the candidate simulant agent from leaf foliage.

In summary, a clearer understanding has been obtained of the effects of liquid viscosity of deposited droplets, wind speed, and particularly the properties of contaminated foliage leaf, namely leaf surface, leaf type, and condition or age of the leaf on the evaporation and the spreading characteristics of deposited DEM droplets.

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PREFACE

The work described in this report was authorized under Project No. 1L162706A553, CB Defense and General Investigations, Task 3-1, Chemical Threat Assessment Technology, and Project No. 1C464803DF95, XM135 MLRS Binary Chemical. This work was started in October 1981 and completed in June 1989. The experimental data are stored on an IBM PC/AT computer.

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EVAPORATION OF A THICKENED AGENT SIMULANT
FROM OAK AND HICKORY LEAVES

1. OBJECTIVE

This report documents the findings of the fourth in a series of experiments on the liquid droplet evaporation and persistency. This laboratory study was conducted to determine how much vapor contamination occurs, and at what rate the vapor contamination becomes airborne when the thickened agent simulant diethyl malonate (DEM) is dispersed in a uniform array of droplets on foliage, oak and hickory leaves. Once the source of vapors is better defined, the prediction of downwind concentrations can be accomplished with an appropriate model of surface evaporation to ascertain the vapor threat over the given period of evaporation for the threat agent.

2. INTRODUCTION

The need and requirements for experimental data to quantify the evaporation and the persistency of thickened liquid agents and simulants dispersed as droplets on various types of natural and structural materials have been outlined in several reports.[1-4] The need includes not only basic evaporation data (i.e., evaporation rates, percent recoveries, etc.) of droplet behavior on the various surfaces, but there is also a requirement to identify the parameters that control the evaporation and persistency of the deposited droplets and determine the extent of their influence over ranges of the parameters that are operationally significant.

An experimental program has been devised to collect the fundamental data needed to more clearly characterize and quantify the evaporation and sorption losses of chemical agents. This program has three related tasks: (1) to quantify the persistency and liquid availability of contamination from nonporous surfaces and determine the principal factors governing liquid persistency, (2) to quantify the evaporation and sorption losses for droplets deposited on porous surfaces of concrete and sand, and (3) to determine the vapor hazards from thickened persistent agents/simulants dispersed on vegetation, turf, and foliage.

In Phase I of this research study, various physical parameters and the extent of their influence on the persistency and liquid availability of deposited droplets on nonporous surfaces of unpainted aluminum and chemically inert Teflon substrates were identified by using two candidate thickened liquid agent simulants, DEM and methyl salicylate (MeS).[2] These two liquid agent simulants have been used extensively in the past as simulants for CW agents TGD and THD, respectively.

In Phase II, basic experimental information was obtained that characterized the evaporation and sorption losses of the candidate thickened MeS and DEM agent simulants deposited as droplets on wet and dry concrete,[3] and of DEM droplets deposited on several compositions of wet and dry sand.[4]

During previous studies, the following five droplet characteristics were quantified for test periods that ranged from 1 to 2 days: (1) the

half-life of the deposited droplet contamination, (2) the average evaporation and recovery rates associated with the half-life, (3) the percent of contamination that is vaporized and recovered from the concrete after 1, 2, and 3 hr, (4) the total percent of contamination from the deposited droplet that is vaporized and recovered from the concrete surface, and (5) the average droplet evaporation rates for 1, 2, and 3 hr after deposition.

In the experiments with concrete surfaces, the primary factors affecting the evaporation characteristics of MeS and DEM were the size of the deposited droplet and the prevailing temperature. Other controlled factors [i.e., viscosity of the thickened agent simulant, moisture content of the concrete, and the relative humidity (RH) of the incident airstream] had little effect on the evaporation characteristics of the deposited droplets for the conditions studied.

The best estimate for the total percent of recoverable contamination from concrete within 1 to 2 days was 75%, which was the extent of the measurement in this study. However, approximately two-thirds of the contamination that eventually evolved from the concrete was recovered within 2 to 3 hr after deposition at temperatures from 60 to 100 °F. Therefore, 3 hr were judged to be the critical period for secondary vapor hazard, following contamination of concrete with thickened agents having intermediate volatility.

The half-life of droplet contamination on concrete, or the time to recover 50% of the mass deposited, was principally affected by the prevailing temperature, the agent simulant characteristics (i.e., vapor pressure, spread factor, etc.), and the incident wind speed for the ranges of the variables tested.

The spread factor of a droplet deposited on concrete was found to be a function of the time after deposition. A maximum spread factor value of 6 [standard deviation (SD) = 1.2] was achieved after approximately 1 hr from an initial spread factor of 5 (SD = 1.27). However, except for the viscosity of the agent simulant, the other factors investigated, most notably the moisture content of the concrete, droplet size, and the liquid agent simulant, did not significantly influence the droplet spread factor in these experiments.

In the experiments with various compositions of wet and dry sand, the primary factors affecting the evaporation characteristics of DEM were the size of the deposited droplet, the ambient temperature, and the incident wind speed. Other controlled factors [i.e., viscosity of the thickened agent simulant, moisture content of the sand, composition of the sand (particle size), and the RH of the incident airstream] had little effect on the evaporation characteristics of the deposited droplet for the conditions studied.

Among the three dominant factors, the ambient temperature is the primary factor controlling the percent of contamination recovered as vapor from the droplets deposited on sand. For the first hour after contamination, wind speed is the second most important factor. However, after the first hour, the size of the droplet deposited on the sand had a slightly greater effect on the percent of contamination recovered than the wind speed. The size of the droplet is the primary factor controlling the evaporation rate of the liquid droplet deposited on sand. The temperature is the second most important factor, and the wind speed is the third most important factor

(parameter) affecting the average evaporation rates of the droplets during the 1-, 2-, 3-, and 6-hr sampling periods. In these experiments, there were interaction effects between the droplet size and the wind speed with the ambient temperature that also affected the evaporation rate of the droplets deposited on sand. Changes in both the ambient temperature and the wind speed had a greater effect on the larger (5 mm diameter) droplets than on the smaller (2 mm diameter) droplets.

The composition of the sand (particle size) had no detectable effect on either the percent of contamination recovered as vapor from the sand or on the average evaporation rate of the droplets deposited on sand during the 1-, 2-, 3-, and 6-hr sampling periods. A slightly greater percent of contamination of DEM droplets deposited on sand was recovered from wet sand than from dry sand for each of the sampling times; however, the differences in recovery were not statistically significant. Evaporation rates from wet sand were consistently greater than the rates for dry sand; however, the differences were within experimental error. Therefore, for all practical purposes, DEM droplets evaporate at the same rate during the first 6 hr whether they are deposited on dry or wet sand. Liquid viscosity [100 per 1,000 centipoise (cP)] of DEM had no detectable effect on either the percent of contamination recovered as vapor or on the average evaporation rates of the droplets deposited on sand during the first 6 hr.

The extent of spreading of a droplet deposited on sand, as measured by the spread factor, varied little for the conditions studied, and none of the six variables investigated in the experiment had a significant effect on the spreading of the droplet. The average spread factor for thickened DEM droplets, 2 and 5 mm diameter, on wet and dry sand was 2.7.

The available half-life data indicated that droplets of thickened DEM deposited on sand at 60 °F have a half-life of 2 to possibly 10 times greater than the half-life of the same droplets deposited on sand at 100 °F.

In this study and during Phase III of the research program, experiments were conducted of the evaporation of thickened DEM deposited as droplets on two species of leaves from oak and hickory trees at the Edgewood Area of Aberdeen Proving Ground. These experiments followed a 2^4 bi-level factorial design. The specific parameters of the experiments investigated included the following:

- Liquid viscosity: 100 and 1,000 cP--the liquid simulant was thickened with EA K125 copolymer to achieve the specified zero shear viscosities

- Average wind speed over the droplets: 3 and 11 mph

- Leaf surface: either the bottom or top surface of the leaf was contaminated

- Leaf type: oak and hickory leaves collected from trees in the Edgewood Area of Aberdeen Proving Ground

- Leaf condition: the green leaf picked in September, and the red/yellow leaf gathered in October.

Two bi-level factorial screening experiments were conducted. In all experiments, the leaves were contaminated with 2 mm diameter droplets of thickened DEM, and the air temperature was controlled at 60 °F. The RH in the experiments was not controlled. The average RH was 42 +/-8% SD.

An area of approximately 4 ft^2 was contaminated in each test. The contamination density was 30 g/m^2. A previous study showed there was no significant difference in droplet evaporative behavior at a contamination density of either 30 g/m^2 or 10 g/m^2 (NATO Standard); therefore, the former was chosen for experimental reasons.

In keeping with the format established in previous reports and to aid in subsequent modeling efforts, an elaborate set of tables is provided for each test case that completely characterizes the evaporation of the array of uniformly spaced and sized droplets deposited on the leaf. The principal tables include vapor concentration values downstream from the contaminated area, residual droplet mass, cumulative mass recovered, evaporation rates as a function time for a deposited droplet, and total yield from the contaminated area. Data are also given on the extent of spreading of DEM droplets on the two leaf surfaces.

All tests were performed in a specially designed open circuit, low-speed wind tunnel, which are briefly described in this report. This wind tunnel can accommodate surfaces up to 6 ft in length. The primary measurement in each experiment was the time history of the vapor concentration, measured with a Miran IA infrared vapor analyzer. Data analyses and transformations of the spectrometer information were performed with the aid of a Fortran computer program described in a previous report.[3] This program was modified to be more interactive and to run on an IBM PC/AT computer, using a MICROSOFT Fortran Compiler (MICROSOFT, Bellevue, WA). A listing of the modified Fortran program is given in Appendix A.

3. EXPERIMENTAL DESIGN

In keeping with the test strategy initiated under Phase 1, a bi-level fractional factorial design was followed to develop a data base for clarifying the most critical physical parameters and the extent of their influence (main effects) on the persistency of liquid droplets on leaf surfaces.

Table 1 lists the variables and the test levels selected for investigation in this initial screening of variables and the experimental test matrix. The design consists of 16 distinct evaporation tests conducted at an ambient temperature of 60 °F. According to convention, a plus sign (+) and a negative sign (-) are used to indicate the high and low levels for each variable in each test. The experiment is a 2^4 factorial design and has a resolution of four (IV); however, because this is a complete factorial design in four variables, there are no confounding of main and interaction effects.

Two experiments were run using the factorial design. Variable 4 is the only variable that differs in these two experiments. In Experiment 1, variable 4 is the type of leaf (hickory versus oak), and in Experiment 2, variable 4 is the condition of the oak leaf (green versus red). The same

Table 1. Design Matrix for Factorial Experiments

Test	Variables 1	2	3	4*	Contrast
1	-	-	-	-	Mean
2	+	-	-	-	1
3	-	+	-	-	2
4	+	+	-	-	12
5	-	-	+	-	3
6	+	-	+	-	13
7	-	+	+	-	23
8	+	+	+	-	123
9	-	-	-	+	4
10	+	-	-	+	14
11	-	+	-	+	24
12	+	+	-	+	124
13	-	-	+	+	34
14	+	-	+	+	134
15	-	+	+	+	234
16	+	+	+	+	1234

Variable Identities/Ranges:

1.	Liquid Viscosity	(+) 1,000 cP	(-) 100 cP
2.	Wind Speed	(+) 11 mph	(-) 3 mph
3.	Leaf Surface	(+) Bottom	(-) Top

Experiment No. 1

4.	Leaf Type	(+) Oak	(-) Hickory

Experiment No. 2

4.	Leaf Condition	(+) Green	(-) Red

* Note: Only Variable 4 differs between experiments 1 and 2.

experimental design was used for both experiments. Thus, half the experiments performed in Experiment 1 pertaining to the oak leaves are also appropriate to Experiment 2. These eight tests (Tests 9-16) from Experiment 1 were not repeated and are used to complete the factorial design for both experiments.

4. EXPERIMENTATION

4.1 Test Materials.

4.1.1 Candidate Chemical Agent Simulant.

Diethyl malonate was the candidate agent simulant used in this study. The physical properties of DEM closely approximates the nerve agent GD. The simulant is made viscoelastic by adding either a copolymer or polymer; in this form, the simulant closely mimics the properties of the thickened agent TGD. However, because the precise nature of the thickened threat agent is unknown, the test strategy was to bracket the operationally significant range of liquid viscosities. Therefore, two liquid viscosities (100 and 1,000 cP) were formulated by adding an appropriate concentration of a copolymer thickener (K125 EA)* that were experimentally determined to be 2.8 and 4.8% (by weight) per 100 mL of DEM.

The pertinent physical properties of the candidate agent simulant, gathered from various sources, are in Table 2. The data on liquid vapor pressure were derived by performing a linear regression of reported vapor pressure values.[4] The coefficients for the evaporating liquid (in air) are based on the optimized Gilland-type equation. An experimental investigation has been undertaken by the Physical Chemistry Branch, Research Directorate, U.S. Army Chemical Research, Development and Engineering Center, to obtain the vapor pressure values for unthickened DEM in the temperature range of interest and the best fit predictive equation for the vapor pressure of DEM.[5]

4.1.2 Contaminated Surface.

Two species of leaves were selected for this study. The Northern Red Oak (quercus borealis) and the Shagbark Hickory (carya ovata) were collected from trees at the Edgewood Area of Aberdeen Proving Gound. The oak and hickory leaves identified as green in the experimental design were picked during early September. Those leaves identified as red were actually multicolored leaves (red/yellow/orange, etc.) that were collected from the same area during October of the same year. The Northern Red Oak measured 5-9 in. long by 4-6 in. wide, and had 5-11 unequal bristle-tipped lobes. The top surface of the leaf was a dark green, and the bottom surface was a paler green. The leaves appear in late spring, turn to either deep red or orange by fall, and hang on until late fall or winter. The hickory leaf is from the Shagbark Hickory, which is the most widespread type of hickory tree on the American continent. The compound leaves of the hickory are alternately

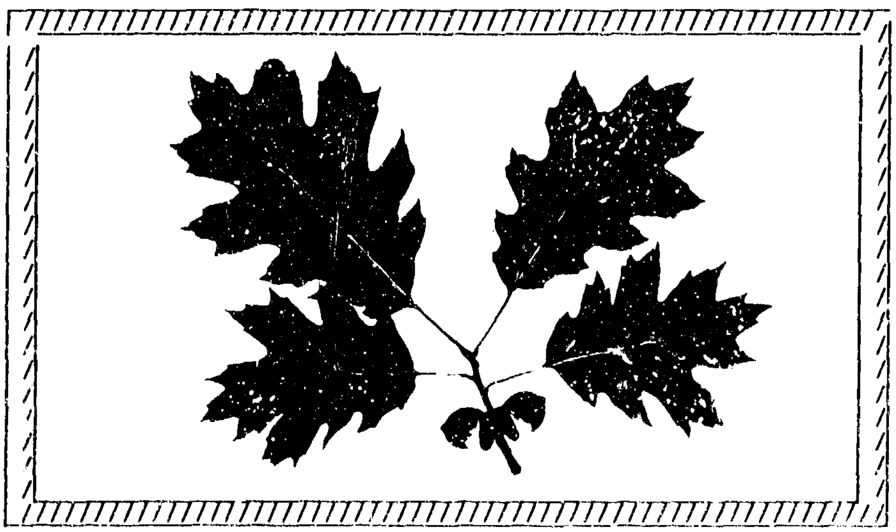
*Manufactured by Rohm and Haas, Philadelphia, PA. Copolymer EA K125 is 80% PMMA, 7% ethyl, and 13% butyl acrylate, with an MW of 2.5×10^6.

Table 2. Physical Properties of Chemical Agent Simulant

Properties	Diethyl Malonate
Molecular weight, gm/mole	160.17
Density, gm/cm^3	1.055 @ 25 ^oC
Surface Tension, dynes/cm	32.3 @ 25 ^oC
Vapor Pressure, mm Hg	
60 ^oF	0.195 (0.101)[6]
80 ^oF	0.427 (0.255)
100 ^oF	0.885 (0.592)
Diffusivity, cm^2/sec	
60 ^oF	0.060
80 ^oF	0.0646
100 ^oF	0.0689
Volatility, $\mu g/cm^3$	
60 ^oF	1.739 (0.897)
80 ^oF	3.659 (2.181)
100 ^oF	7.310 (4.882)

arranged on a stem with five or seven leaflets. The narrow base of each leaflet is attached to the leaf stem. The three outer leaves are 4 to 6 in. long, while the lower (inner) ones are much smaller. Narrow at the base and wide at the top, the margin of each leaflet is toothed and the shape is described aas obovate. Photos of the oak and hickory leaves are shown in Figure 1.

(a)



(b)

Figure 1. (a) Hickory Leaves (Carya ovata), and
(b) Oak Leaves (Quercus Borealis)

At the most, 1 to 2 weeks may have transpired between the time the leaves were collected and used in an evaporation experiment. To reduce the deterioration of the leaves during this period, the leaves were stored in sealed polyethylene bags and refrigerated. There was no discernible difference in the appearances of most of the leaves after 2 weeks of storage. The leaves that appeared to have changed were not used. No attempt was made in these initial screening experiments to investigate the effect of storage time of the leaves on the evaporation characteristics of droplets deposited on the leaves.

4.2 Experimental Wind Tunnel Facility.

An overall view of the experimental Plexiglas wind tunnel facility that was designed for controlled large-scale evaporation studies is shown in Figure 2. Room air enters the wind tunnel through the inlet filter and the evaporator of a high-volume 27,000 BTU, water-cooled air conditioning unit (Koldwave Model K26DF) and exits into a laboratory fume hood. A large test section can accommodate contaminated materials up to 75 in. long. The walls of the wind tunnel downstream from the test section are lined with Bytac,* a Teflon overlay, to prevent adsorption of vapors on the walls and to facilitate cleaning. The wind tunnel offers a wind speed range of approximately 1-15 mph, a temperature range of 10-40 °C, and a RH of 15-85%. Details of this facility have been described in an earlier report.[2]

4.3 Procedures.

All the evaporation experiments were conducted, using approximately 4 ft^2 of exposed leaf surface. This leaf surface was contaminated with a uniform array of 2 mm diameter droplets to a deposition level of 30 g/m^2 (nominal values). The test leaf samples were supported and held in place horizontally 2 in. above the wind tunnel's floor by a specially designed wire rack, which had a mesh size of approximately 2 in. Two wire racks (25 in. long by 10.5 in. wide) were used in each evaporation experiment. The leaves were carefully positioned on the wire racks to form a continuous layer of overlapped leaves, without any large voids. This facilitated contaminating the leaves with a uniform array of test droplets and prevented the loss of any test droplets. A similar wire rack was also laid over the leaves. This prevented the leaves from flapping in the wind during the test.

The test droplets of the thickened DEM were expeditiously produced by simply immersing a rod into a liquid reservoir to a predetermined depth and then transferring the adherent liquid to the leaves by allowing the droplets to drip off the rod. This technique, which has been successfully employed in previous droplet evaporation experiments, makes use of a transfer block, with an array of uniformly spaced rods of the appropriate size, to expedite the contamination process and facilitate producing an array of droplets with the desired spacing. With this method, contaminating the two racks with droplets of DEM was accomplished in approximately 10-15 min. The total liquid mass contamination on each rack of leaves was determined gravimetrically with a standard laboratory beam balance. This provided a reliable

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*Distributed by Bolab, Incorporated, Derry, NY

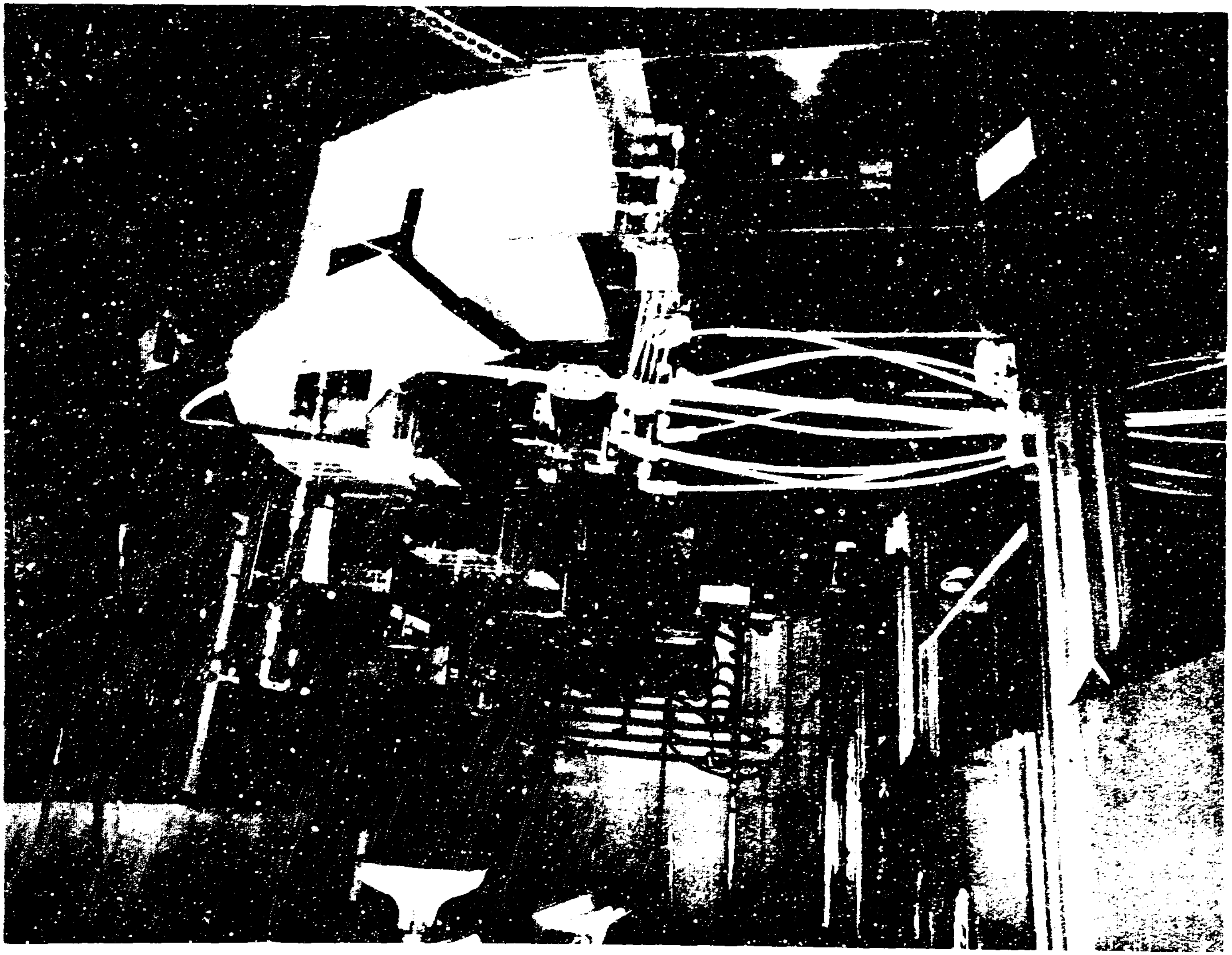

Figure 2. Experimental Wind Tunnel Facility

means of estimating the average droplet size per rack. The measurements of contamination mass had an accuracy of +/-0.1 g. Two contaminated racks of leaves were placed in the test section of the wind tunnel. These were butted together to form a continuous contaminated area (patch) 50 in. long by 10.5 in. wide.

During the course of an experiment, the incident air temperature and RH were measured with a Humitemp instrument* and associated electro-humidity temperature sensors in a probe that was projected into the airstream ahead of the test section. The data were recorded on a standard two-channel strip chart recorder. The accuracy of the RH measurements is +/-2.5%, and the accuracy of the temperature measurement is +/-0.5 °C. The wind speed [feet per minute (fpm)] was measured with a direct reading, electronic anemometer,** with a rotating vane that was also installed ahead of the test section. The stated meter accuracy was +/-2% of full-scale deflection. The surface temperature of the contaminated leaves was measured with copper constantan thermocouples and a multipoint digital/recording thermometer (Omega Model 2176A***).

A measurement of the simulant vapor concentration in the airstream was made continuously at a location approximately 9 ft downstream from the contaminated area with a Miran IA analyzer† and recorded on a Linear Strip Chart recorder.†† The Miran IA is a single beam spectrometer variable filter that is capable of scanning the infrared spectral range between 2.5 and 14.5 μm.

The vapor samples were obtained from a multipoint probe. The probe is a grid of nine symmetrically arranged sampling tubes located at a position downstream from the test section where a uniform vapor concentration profile was established (see Figure 2). During the course of the experiment, the gas analyzer was periodically purged with an automatic zero gas purging system (Model 063-5751) to enhance the long-term stability of the instrument. The accuracy of the zero gas purging system is reported as +/-1 millivolt (mv).

At the end of the test, the analog records of vapor concentration/time information were manually converted into a representative series of data points (maximum - 40) and stored in assigned computer files for detailed computer analysis. The resolution of these data conversions is limited to 1 mv [approximately 0.02 parts per million (ppm)] which is equivalent to the background noise level of the Miran IA vapor analyzer system.

A special purpose Fortran computer program was written to perform the cumbersome tasks of reducing all the digitized voltage readings from the Miran IA analyzer time plots into an equivalent time history of vapor concentration values and transforming the basic vapor concentrations to dosage values, mass transfer rates, and the deposited droplet mass remaining as

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*Manufactured by Phys-Chemical Research Corporation, New York, NY
**Manufactured by Davis Instrument Manufacturing Company, Inc., Baltimore, MD
***Omega Engineering, Inc., Stamford, CT
†Wilks Scientific Corporation, Norwalk, CT
††Linear Instruments Corporation, Irvine, CA

a function of time, etc. This enabled us to extract as much information as possible for an in-depth analysis of the experimental results and to also tabulate the mass of information with a consistent style and notation to facilitate further reference. A discussion of the computer program is given in the Phase I and II reports.[2,3] The original Fortran program was slightly modified to handle the analyses of tests on an IBM PC/AT computer for this study. A listing of the IBM PC/AT computer version for this study is in Appendix A.

5. RESULTS

5.1 Evaporation and Recovery.

In this preliminary screening, an experimental data base was developed to quantify the evaporation and persistency of thickened DEM deposited on foliage, which consisted of the Northern Red Oak and the Shagbark Hickory leaves. For purposes of this experiment, distinctions were made between the top and bottom surfaces of both species of leaves, and additionally for the oak leaves, distinctions between the condition or age of the leaf, identified as green and red leaves. All the evaporation results are based on tests with one candidate agent simulant, DEM. The physical properties of DEM closely resembles those of the nerve agents having intermediate volatility. When thickened with a polymeric additive, this simulant becomes more viscous and closely mimics the properties of a thickened CW agent, such as TGD.

The primary purpose of these controlled wind tunnel experiments was to quantify as a function of time and under a variety of conditions the amount of agent and the rate at which it becomes airborne. An extensive number of tables and figures are provided in Appendixes B-I. With this information on liquid droplet persistency/evaporation, prediction of downwind concentrations can be accomplished using an appropriate surface evaporation model to determine the vapor threat to personnel over the given period of evaporation.

A bi-level factorial experiment was followed to aid in clarifying and identifying the most critical parameters controlling the persistency and evaporation characteristics of thickened viscoelastic liquid droplets deposited on a porous surface, such as a leaf. The variables treated in this initial screening included: (a) liquid viscosity of DEM, (b) wind speed, (c) leaf surface, (d) type of leaf (Experiment 1), and (e) condition of leaf (Experiment 2). By design, 16 distinct tests, in Experiment 1, and 8 complimentary tests, in Experiment 2, were investigated. These 24 tests were conducted at one ambient temperature of 60 °F and with an average RH of 42%.

The results of experimental evaporation are given in detail in Tables 1-24 of Appendixes B-L. Tables 1-16 contain the results for the tests performed in Experiment 1 with oak and hickory leaves, and Tables 17-24 contain the test results in Experiment 2 pertaining only to oak leaves.

Appendix B provides the absorbance (volts) data measured by the Miran IA vapor analyzer, on which all subsequent tabulations were based. The absorbance voltage readings were derived from continuous strip chart recordings, using a fixed sampling period that was chosen based on the length of

the experiment and how quickly the readings changed during any given test. The sampling period ranged from 10 to 45 min, but was predominantly 15 min for the high wind speed condition and 30 min for the low wind speed. An integration of the absorbance volts and time data was performed using Simpson's rule. The area (volt minute) is proportional to the cumulative vapor mass recovered under the steady state test conditions. The fractional (normalized) values given in the last column of Appendix B are based on the total initial liquid contamination for two contaminated racks of leaves. The last value in this column is a measure of the total fractional mass recovered from the leaves.

Appendix C presents the vapor contamination levels developed from the uniform array of droplets covering an area of approximately 4 ft^2 of leaf surface. The vapor concentration is given as a function of time in terms of parts per million in Column 2 and equivalently as micrograms per cubic meter in Column 3. Columns 4 and 5 indicate the vapor contamination (micrograms per cubic meter) developed per unit area and per unit contamination mass. The sixth and seventh columns present the vapor concentration attributed to an average size deposited droplet, in terms of parts per million and micrograms per cubic meter, respectively.

Appendix D contains the data on the evaporation history for a typical test droplet in the array and the results of a simple half-life model fitted to the residual droplet mass. The elapsed time is given in Column 1 of the tables. The residual droplet mass, in terms of milligrams, and the fractional mass remaining are shown in Columns 2 and 3, respectively. Alternately, Columns 4 and 5 in the table indicate the cumulative mass recovered in terms of milligrams of mass and fractional amount. The right half of this table provides the predictions for a simple half-life model. The half-life is estimated by a linear interpolation of the fractional mass recovered.

A summary of the half-life values for each experiment are given in Table 4 and are analyzed in the Section 6, Analysis, of this report.

Columns 6 and 7 of the tables in Appendix D indicate the residual contamination mass in terms of milligrams and fractional amount derived from the half-life model. Columns 8 and 9 show two alternate ways of indicating the elapsed time in the evaporation experiment. Column 9 gives the elapsed time in terms of half-lives and is perhaps more meaningful and useful.

Appendix E contains the evaporation rates of the residual droplet deposited on leaf surfaces; Columns 1, 2, and 3 depict the elapsed time in terms of minutes, fractional values, and half-lives. Column 4 gives the corresponding droplet evaporation rates in micrograms per minute. Column 5 indicates the normalized evaporation rates. The normalization was obtained by dividing the measured evaporation rate by the fraction of liquid droplet remaining.

Information defining the experimental contamination levels achieved for each rack of leaves in the experiment are in Appendix F [e.g., grams of contamination, number of droplets, grams of contamination per area (square meter), and grams of contamination per droplet]. In most instances, the level of contamination of one rack of leaves is identical to the level of contamination of another rack; therefore, the estimated mean droplet mass for

the experiment is the same as that determined for the individual racks of leaves. In these cases, the indicated equivalent droplet diameter (millimeter) is also the same.

Graphs depicting the evaporation behavior of a droplet on a leaf surface are shown in Appendixes G through I. Plots of the residual droplet mass (milligram) versus time are in Appendix G. Appendix H depicts the corresponding droplet evaporation rates (micrograms per minute) as a function of time. The rates are given as negative values in keeping with the concept of vapor mass lost by the deposited droplet. Appendix I gives a combined plot showing the fractional mass remaining and the complimentary plot of fractional mass recovered as a function of time, normalized by dividing time by the droplet half-life. Additionally, a first order half-life model fit to data, given the fractional droplet mass remaining is indicated.

5.2 Droplet Spread Factors.

The extent of spreading of a liquid droplet deposited on leaf surface was determined from measurements of the minimum and maximum diameter of the coploymer residue, which was visible on the leaf surface after the liquid droplet had evaporated. The residual of 40 of 1,472 total droplets in the uniform array were examined for each test case. These values, as well as the average spread diameter for the sample of droplets, are in Appendix J. The appropriate spread factor information, derived from the ratio of the average spread diameter of the deposited droplet and the equivalent mass diameter of the droplets (Appendix F), is summarized in Table 3.

6. ANALYSIS

6.1 Evaporation and Vapor Recovery.

In keeping with the procedure established in Phase I, seven droplet evaporation characteristics were selected from the pool of empirical information cited above to describe the persistency/evaporation of a droplet deposited on a leafy surface. Information of this type provides the responses required for detailed statistical analysis of the experimental data and is extremely useful in identifying the conditions/critical parameters that contribute to the vapor hazard produced by contaminated surfaces. The seven evaporation characteristics that seem most pertinent are as follows:

- The percent of contamination recovered after the 1st, 2d, 3d, and 6th hr from droplets deposited on leafy surfaces

- The average droplet evaporation rates (micrograms per minute) based on a 1st, 2d, 3d, and 6th hr following deposition on the leaf surfaces

- The half-life (minutes) for a droplet in the uniform array of droplets deposited on the leaf surfaces or the time required to recover 50% of the initial (volatile) contaminant

- The average evaporation and recovery rates (micrograms per minute) associated with the half-life of the contaminant

Table 3. Average Spread Factor of 2 mm Diameter Droplets of Thickened Diethyl Malonate on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP		1,000 cP	
		Nominal Wind Speed		Nominal Wind Speed	
		3 mph	11 mph	3 mph	11 mph
Hickory (Green)	Top	2.47	2.72	2.67	2.80
	Bottom	1.89	1.91	1.91	1.85
Oak (Green)	Top	2.90	2.36	2.39	2.24
	Bottom	1.94	1.94*	1.83	1.80
Oak (Red)	Top	1.97	1.86	1.99	1.99
	Bottom	1.77	1.87	1.76	1.77

* Estimate based on rearest

- The total percent of the contamination recovered as vapor from the droplets deposited on the leaf surfaces

- The lifetime of the droplet contamination deposited on the leaf surfaces

- The average evaporation rate (micrograms per minute) over the lifetime of the droplet contamination

These seven droplet evaporation characteristics are given in Tables 4-16 for each of the tests in the two, 2^4 factorial experiments.

A factorial analysis (Yates' method), half normal probability plots (HNPP) analysis of the magnitude of the effects, and an analysis of variance (ANOVA) were performed to statistically examine the evaporation characteristics in Tables 4-16. The results of the factorial analysis and the studies of the magnitude of the effects in the two factorial experiments via HNPP, which depict the most significant factors and the 0.40, 0.20 and 0.05 confidence bars for Experiments 1 and 2, respectively, are in Appendixes K and L. The ANOVA results for both experiments are in Appendix M. In performing the ANOVA, it was arbitrarily assumed that all interactions of order, three and higher, were really zero, and the five corresponding sums of squares are used to estimate the residual variance (mean square term) in each case. The "F" statistic corresponding to confidence levels of 99.9, 99, 95, 90 and 75% for each case is indicated in Tables M1-M26. Because at times there is a question as to which effects can reasonably be pooled together into the residual sum of squares (which interactions will be assumed to be either zero or at least negligible), the probability plots of the magnitude of the effects in each experiment also serve to confirm the more formal ANOVA table. Adopting a significance level of either 0.10 or 0.20 or a confidence bar of 0.20, as used in HNPP (or correspondingly, a confidence level of 90 or 80%), seems appropriate in examining the significance of the main effects and interactions in this experiment.

In general, the factorial analysis and the ANOVA results are in good agreement. Tables 17 through 19 summarize the findings of the ANOVA for each of the droplet evaporation characteristics. Table 17 provides a summary of the analysis on the half-life and lifetime of the deposited droplet, the total percent of contamination recovered as vapor, and the average evaporation rates based on droplet half-life and lifetime values. Table 18 provides a summary of the most significant factors affecting the percent of contamination recovered as vapor after the 1st, 2d, 3d, and 6th hr. Table 19 indicates the most significant factors affecting the average droplet evaporation rates for the same time periods after deposition of the droplets on the leaf surfaces.

6.1.1 Wind Speed (Factor 2).

Inspecting the summarized ANOVA results in Tables 17 through 19 clearly indicates that wind speed [Factor 2 (11 mph versus 3 mph)] in these experiments is the most dominant factor in both droplet evaporation

Text continued on page 47.

Table 4. Half-Life (Minutes) of Droplet Contamination of 2 mm Diameter Droplets of Thickened Diethyl Malonate Deposited on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP		1,000 cP	
		Nominal Wind Speed		Nominal Wind Speed	
		3 mph	11 mph	3 mph	11 mph
Hickory (Green)	Top	246	84	264	98
	Bottom	320	148	332	156
Oak (Green)	Top	245	100	287	136
	Bottom	367	150	404	162
Oak (Red)	Top	339	142	315	137
	Bottom	341	145	315	150

Table 5. Average Evaporation Rate (Micrograms per Minute) over Droplet Half-Life of 2 mm Diameter Droplets of Thickened Diethyl Malonate Deposited on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP, Nominal Wind Speed 3 mph	100 cP, 11 mph	1,000 cP, Nominal Wind Speed 3 mph	1,000 cP, 11 mph
Hickory (Green)	Top	12.6	33.1	12.2	32.9
	Bottom	8.7	20.5	9.1	20.8
Oak (Green)	Top	10.5	28.4	11.3	23.7
	Bottom	7.4	19.0	8.0	19.1
Oak (Red)	Top	9.3	22.3	10.3	24.4
	Bottom	8.9	20.0	10.1	22.0

Table 6. Total Percent of Contamination Recovered as Vapor from 2 mm Diameter Droplets of Thickened Diethyl Malonate Deposited on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP		Liquid Viscosity 1,000 cP	
		Nominal Wind Speed		Nominal Wind Speed	
		3 mph	11 mph	3 mph	11 mph
Hickory (Green)	Top	76	84	84	94
	Bottom	75	87	77	89
Oak (Green)	Top	80	88	83	89
	Bottom	83	87	83	86
Oak (Red)	Top	81	86	98	98
	Bottom	83	88	93	96

Table 7. Time (Minutes) for Complete Evaporation of 2 mm Diameter Droplets of Thickened Diethyl Malonate Deposited on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 100 cP, Nominal Wind Speed 11 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 11 mph
Hickory (Green)	Top	870	360	1,020	370
	Bottom	870	480	900	480
Oak (Green)	Top	780	360	960	390
	Bottom	1,280	465	1,160	435
Oak (Red)	Top	1,215	450	1,280	560
	Bottom	1,140	510	1,240	480

Table 8. Average Evaporation Rate (Micrograms per Minute) over Lifetime of 2 mm Diameter Droplets of Thickened Diethyl Malonate Deposited on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 100 cP, Nominal Wind Speed 11 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 11 mph
Hickory (Green)	Top	5.4	13.0	5.3	16.4
	Bottom	4.8	11.0	5.2	12.0
Oak (Green)	Top	5.3	13.8	5.6	14.8
	Bottom	3.5	10.6	4.6	12.2
Oak (Red)	Top	4.2	12.2	4.9	11.8
	Bottom	4.4	10.0	4.7	13.1

Table 9. Percent of Contamination Recovered as Vapor 1 hr After Deposition of 2 mm Diameter Droplets of Thickened Diethyl Malonate on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 100 cP, Nominal Wind Speed 11 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 11 mph
Hickory (Green)	Top	16	39	14	33
	Bottom	12	23	11	22
Oak (Green)	Top	16	33	13	24
	Bottom	10	22	9	21
Oak (Red)	Top	10	24	11	24
	Bottom	10	23	11	22

Table 10. Percent of Contamination Recovered as Vapor 2 hr After Deposition of 2 mm Diameter Droplets of Thickened Diethyl Malonate on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP		1,000 cP	
		Nominal Wind Speed 3 mph	11 mph	Nominal Wind Speed 3 mph	11 mph
Hickory (Green)	Top	29	63	27	58
	Bottom	22	42	21	40
Oak (Green)	Top	29	57	24	45
	Bottom	19	42	17	39
Oak (Red)	Top	20	44	21	44
	Bottom	20	43	21	41

Table 11. Percent of Contamination Recovered as Vapor 3 hr After Deposition of 2 mm Diameter Droplets of Thickened Diethyl Malonate on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP		1,000 cP	
		Nominal Wind Speed 3 mph	11 mph	Nominal Wind Speed 3 mph	11 mph
Hickory (Green)	Top	40	76	37	75
	Bottom	32	58	30	56
Oak (Green)	Top	40	74	34	62
	Bottom	27	58	23	54
Oak (Red)	Top	29	60	31	62
	Bottom	29	59	30	58

Table 12. Percent of Contamination Recovered as Vapor 6 hr After Deposition of 2 mm Diameter Droplets of Thickened Diethyl Malonate on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 100 cP, Nominal Wind Speed 11 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 11 mph
Hickory (Green)	Top	62	84	61	94
	Bottom	54	84	53	85
Oak (Green)	Top	64	88	59	89
	Bottom	49	85	46	84
Oak (Red)	Top	54	85	56	94
	Bottom	52	84	56	92

Table 13. Average Droplet Evaporation Rate (Micrograms per Minute) for the First Hour After Deposition of 2 mm Diameter Droplets of Thickened Diethyl Malonate on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 100 cP, Nominal Wind Speed 11 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 11 mph
Hickory (Green)	Top	16.9	36.2	15.4	35.9
	Bottom	10.9	23.1	10.8	23.3
Oak (Green)	Top	13.7	31.0	14.4	26.4
	Bottom	8.6	21.5	9.4	21.6
Oak (Red)	Top	10.9	25.2	11.7	26.3
	Bottom	10.6	22.3	11.3	24.4

Table 14. Average Droplet Evaporation Rate (Micrograms per Minute) for the First 2 hr After Deposition of 2 mm Diameter Droplets of Thickened Diethyl Malonate on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP		Liquid Viscosity 1,000 cP	
		Nominal Wind Speed 3 mph	Nominal Wind Speed 11 mph	Nominal Wind Speed 3 mph	Nominal Wind Speed 11 mph
Hickory (Green)	Top	15.2	29.3	14.3	31.3
	Bottom	10.4	21.3	10.5	21.7
Oak (Green)	Top	12.3	27.1	13.1	24.3
	Bottom	8.4	19.7	9.1	20.0
Oak (Red)	Top	10.5	23.0	11.3	24.9
	Bottom	10.1	20.7	11.0	22.7

Table 15. Average Droplet Evaporation Rate (Micrograms per Minute) for the First 3 hr After Deposition of 2 mm Diameter Droplets of Thickened Diethyl Malonate on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP		1,000 cP	
		Nominal Wind Speed		Nominal Wind Speed	
		3 mph	11 mph	3 mph	11 mph
Hickory (Green)	Top	13.9	23.4	13.4	27.0
	Bottom	9.8	19.6	10.1	20.2
Oak (Green)	Top	11.4	23.2	12.4	22.3
	Bottom	8.1	18.2	8.9	18.7
Oak (Red)	Top	10.2	21.2	11.0	23.2
	Bottom	9.7	19.1	10.7	21.3

Table 16. Average Droplet Evaporation Rate (Micrograms per Minute) for the First 6 hr After Deposition of 2 mm Diameter Droplets of Thickened Diethyl Malonate on Leaf Surface at 60 °F Air Temperature and 42% Average Relative Humidity

Leaf Type (Condition)	Leaf Surface	Liquid Viscosity 100 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 100 cP, Nominal Wind Speed 11 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 3 mph	Liquid Viscosity 1,000 cP, Nominal Wind Speed 11 mph
Hickory (Green)	Top	10.7	13.0	11.0	16.8
	Bottom	8.3	14.1	9.0	15.3
Oak (Green)	Top	9.2	13.8	10.6	15.9
	Bottom	7.4	13.4	8.2	14.5
Oak (Red)	Top	9.2	15.0	10.0	17.5
	Bottom	8.8	13.6	9.8	16.8

Table 17. Summary of ANOVA of 2^4 Experiments 1 and 2: 2 mm Diameter Droplets of DEM Deposited on Leaf Surfaces at 60 ^{0}F Air Temperature and 42% Average Relative Humidity

Source	(A) Exp 1	(A) Exp 2	(B) Exp 1	(B) Exp 2	(C) Exp 1	(C) Exp 2	(D) Exp 1	(D) Exp 2	(E) Exp 1	(E) Exp 2
1 Liquid Viscosity	**				**	****			**	**
2 Wind Speed	****	****	****	****	****	***	****	****	****	****
3 Leaf Surface	****	**	*				****	***	***	***
4 Leaf Type/Condition	**			**		****	**			*
Interactions										
1x2										
1x3					*	**				
1x4					*	****				
2x3	**						***	*	**	
2x4					**					
3x4		**		**				**		*

Keys:

(A) Half-Life of Droplet

(B) Lifetime of Droplet

(C) Total Percent of Contamination Recovered as Vapor

(D) Average Evaporation Rate of Droplet Over Half-Life

(E) Average Evaporation Rate Over Lifetime of Droplet

Critical Values for F-Statistic:

**** $F_{1,5,0.999} = 47.18$

*** $F_{1,5,0.99} = 16.26$

** $F_{1,5,0.95} = 6.61$

* $F_{1,5,0.90} = 4.06$

Table 18. Summary of ANOVA of 2^4 Experiments 1 and 2 on Percent of Contamination Recovered as Vapor After Specified Time from 2 mm Diameter Droplets of DEM Deposited on Leaf Surface at 60 ^{0}F Air Temperature and 42% Average Relative Humidity

Source	1 hr		2 hr		3 hr		6 hr	
	Exp 1	Exp 2	Exp 1	Exp 2	Exp 1	Exp 2	Exp 1	Exp 2
1 Liquid Viscosity	**	*	**	**	**	**		
2 Wind Speed	****	****	****	****	****	****	****	****
3 Leaf Surface	***	***	****	***	****	****	***	****
4 Leaf Type/Condition	*	*	**	*	**			
Interactions								
1x2								
1x3								
1x4		*		**		**		**
2x3	**		**				**	
2x4								
3x4		**		**		***		***

Critical Values for F-Statistic:

**** $F_{1,5,0.999} = 47.18$

*** $F_{1,5,0.99} = 16.26$

** $F_{1,5,0.95} = 6.61$

* $F_{1,5,0.90} = 4.06$

Table 19. Summary of ANOVA of 2^4 Experiments 1 and 2 on Average Evaporation Rate over Specified Time for 2 mm Diameter Droplets of DEM Deposited on Leaf Surfaces at 60 °F Air Temperature and 42% Relative Humidity.

Source	1 hr Exp 1	1 hr Exp 2	2 hr Exp 1	2 hr Exp 2	3 hr Exp 1	3 hr Exp 2	6 hr Exp 1	6 hr Exp 2
1 Liquid Viscosity						**	**	***
2 Wind Speed	****	****	****	****	****	****	****	****
3 Leaf Surface	****	***	****	***	***	****	***	***
4 Leaf Type/Condition	**		**		**			***
Interactions								
1x2								
1x3								
1x4								
2x3	*		*			*		
2x4								
3x4		**		**		**		*

Critical Values for F-Statistic:

**** $F_{1,5,0.999} = 47.18$

*** $F_{1,5,0.99} = 16.26$

** $F_{1,5,0.95} = 6.61$

* $F_{1,5,0.90} = 4.06$

experiments. The "F" statistic associated with the wind speed effect is significant at 0.1% level for all evaporation characteristics examined in both of the factorial experiments. The effect produced by the wind speed is predominantly a direct effect. There is only one notable interaction effect (Factor 23) between the wind speed and the leaf surface, which is significant at 5% level in these experiments. For each of the droplet evaporation characteristic examined, except for the total contamination recovered from the DEM droplets deposited on the leaf surfaces, wind speed alone can explain most of the variation in the responses, 80 and 88% in Experiments 1 and 2, respectively. The total percent of contamination recovered was strongly dependent on the viscosity of the deposited liquid droplet and condition or age of the leaf surface, especially in Experiment 2. These effects are discussed in Sections 6.1.2 and 6.1.3. On the average, the initial (0-3 hr) average droplet evaporation rate of a droplet deposited on the leaf surface at 3 mph is one-half the evaporation rate of the droplet exposed to a wind speed of 11 mph. Correspondingly, the percent of contamination recovered as vapor from the contaminated surface at 3 mph when compared to 11 mph is one-half. However, the average droplet evaporation rate for 6 hr at 3 mph is nearly two-thirds the evaporation rate at 11 mph (9.3 μg/min versus 14.6 μg/min and 9.2 μg/min versus 15.1 μg/min) in Experiments 1 and 2. The evaportion rate averaged over the lifetime of the droplet on the leaf surface at 3 mph is 38% of that for droplets at 11 mph in Experiments 1 and 2 (5.0 μg/min versus 13.0 μg/min and 4.6 μg/min versus 12.3 μg/min), respectively. The difference in the lifetime of the deposited droplets at 3 mph and 11 mph, 9.3 hr in Experiment 1 (980 min versus 418 min) and 10.8 hr (1,106 min versus 456 min in Experiment 2), is significant, both statistically and operationally. Additionally, the 3-hr difference in the half-life of the deposited droplets evaporating at 3 mph versus 11 mph, which is attributable mainly to the difference in the wind speed, in both experiments, is also of operational significance.

In summary, the variation in the evaporation characteristics of the DEM droplets deposited on leaf surfaces at a constant temperature is due primarily to the difference in wind speed (3-11 mph) in these experiments. The increase in droplet evaporation rates, the percent of contamination recovered during evaporation, and the decrease in persistency of the droplets deposited on the leaf surfaces exposed to wind speed of 11 mph, when compared to 3 mph, are both statistically and operationally significant.

6.1.2 Leaf Surface (Factor 3).

The leaf surface [Factor 3 (top versus bottom)] in Experiments 1 and 2 is also highly significant at 0.1 and 1.0% levels, respectively, for all the droplet evaporation characteristics examined, except for the lifetime of the droplet deposited on the leaf surfaces and for the total percent of contamination recovered as vapor from the evaporating droplets. Apparently, for short times (0-3 hr), whether the top or bottom surfaces of the oak and hickory leaves are contaminated, has a direct effect on the amount and rate at which the droplet contamination evaporates. However, the leaf surface does not have a direct effect on the long-term yields in the evaporation experiment (i.e., the total amount of contamination that evolves or the total time required for evaporation of the deposited droplet). There is evidence of an interaction effect between the top and bottom surfaces and condition or

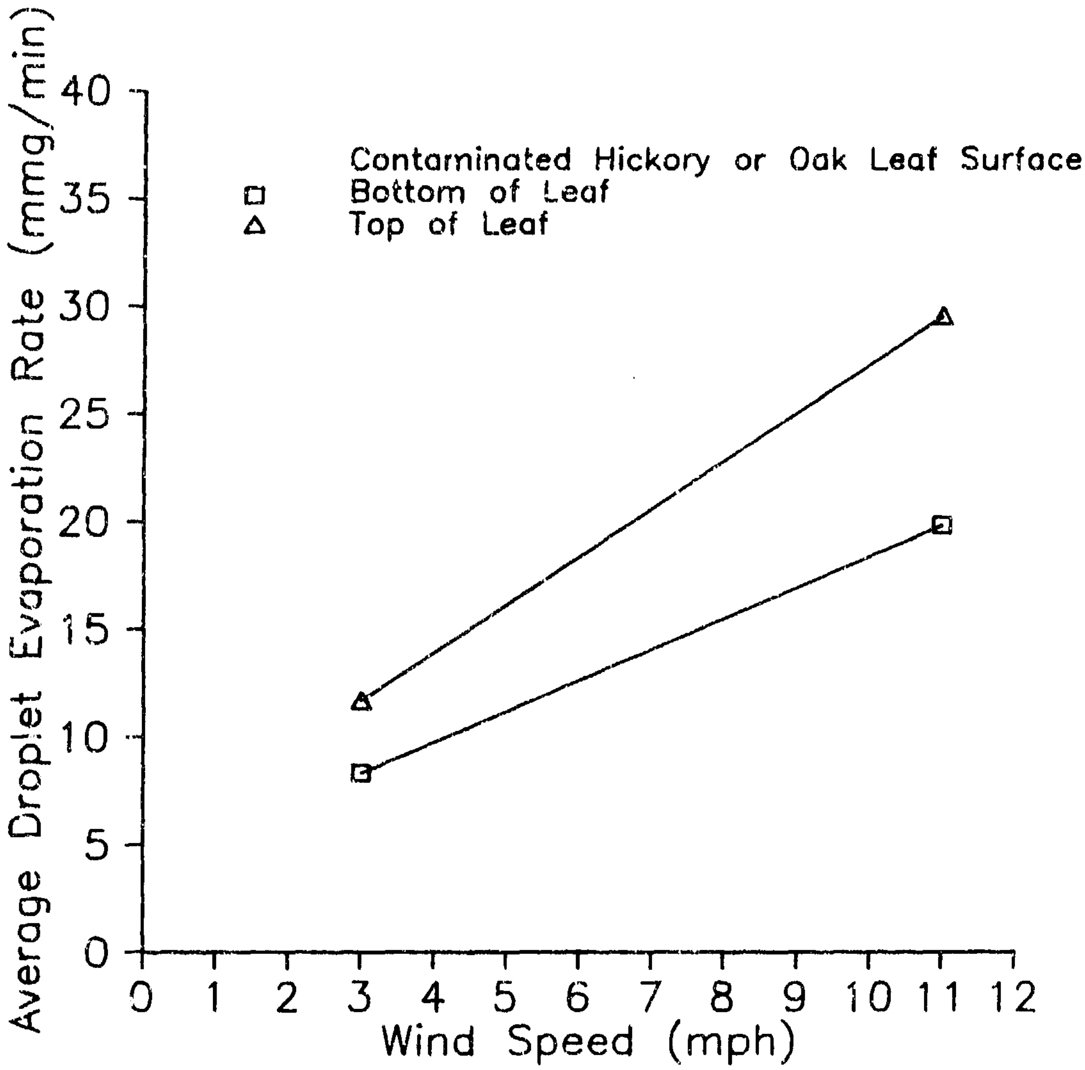

Figure 3. Effect of Interaction Between Wind Speed and Leaf Surface on the Average Droplet Evaporation Rate for Droplet Half-Life (Factor 23) in Experiment 1

interaction is evident with the hickory and oak leaves in Experiment 1. There is however evidence of an interaction between the leaf surface and the wind speed (Factor 23) that has an effect on the initial evaporation rate of the droplets in both the ANOVA and HNPP analysis. While there is only a small difference in the evaporation rate of the droplets deposited on the top and bottom surfaces at the the 3 mph wind speed (approximately 3 μg/min), a two-way comparison (Figure 3) shows that this interaction arises because there is a substantial difference in the evaporation rates (10.4 μg/min) between droplets deposited on the top and bottom leaf surfaces at 11 mph. This is probably related to the finding that droplets deposited on the top surfaces of the oak and hickory leaves spread substantially more than droplets deposited on the bottom surfaces of these leaves. With a larger exposed droplet surface, an increase in the incident wind speed can be expected to have a greater effect on the droplet evaportion rates, etc. It is noteworthy that the differences in the percent of contamination recovered from the top and bottom leaf surfaces in Experiments 1 and 2 are negligible, approximately 10 and 5%, respectively. These differences are not considered to be operationally significant to warrant making the distinction between the top and bottom surfaces of the leaf in modeling downwind vapor hazards. In addition, the leaf surface does not have to be considered to predict the persistency of the hazard because droplet lifetime and the total percent of vapor recovered are not affected by the leaf surface.

6.1.3 Leaf Types and Leaf Conditions (Factor 4).

In comparison with the wind speed and leaf surface effects, the type of leaf (hickory versus oak), Factor 4 in Experiment 1, has a minor effect on the evaporative behavior of the deposited thickened DEM droplets. Most notably, the type of leaf that is contaminated has a direct effect on the rate of evaporation and the half-life of the droplet, which are significant at the 5% level. According to the HNPP analysis, there are no two factor interactions that are significant at the 5% level. Therefore, the interaction (Factor 24) in Table 17 is suspect. The difference in the half-life of DEM droplets deposited on hickory and oak leaves (206/231 min) is <30 min and is not statistically significant by the HNPP standard. Moreover, a difference of 30 min in droplet half-life is not believed to be operationally significant. For the first 3 hr after deposit, the significant increase (2-3 μg/min) in the average evaporation rate for droplets deposited on hickory versus oak leaves, which is judged to be significant, cannot be attributed to a difference in spreading of the droplet on the leaf surfaces. Therefore, the difference in evaporative behavior of the droplets, cannot be directly attributed to the species of leaf. Because this increase in evapoation rate corresponds to <5% increase in the amount of contamination recovered from the hickory when compared to the oak leaf, it is not considered to be operationally significant. This raises the hope that leaf species does not have to be included to model the evaporative behavior of the droplets deposited on foliage in the field.

With regards to Factor 4 in Experiment 2, the condition of the oak leaf (red October leaf versus green September leaf), the statistical analysis indicates only the total percent of contamination recovered is directly affected by the condition or age of the leaf. Factor 4 is significant at the 0.1% level; however, there is also a large interaction (Factor 14) between the liquid viscosity and the leaf condition, which is also significant at 0.1%. The two-way plot of Factor 14 in Figure 4 shows that this interaction

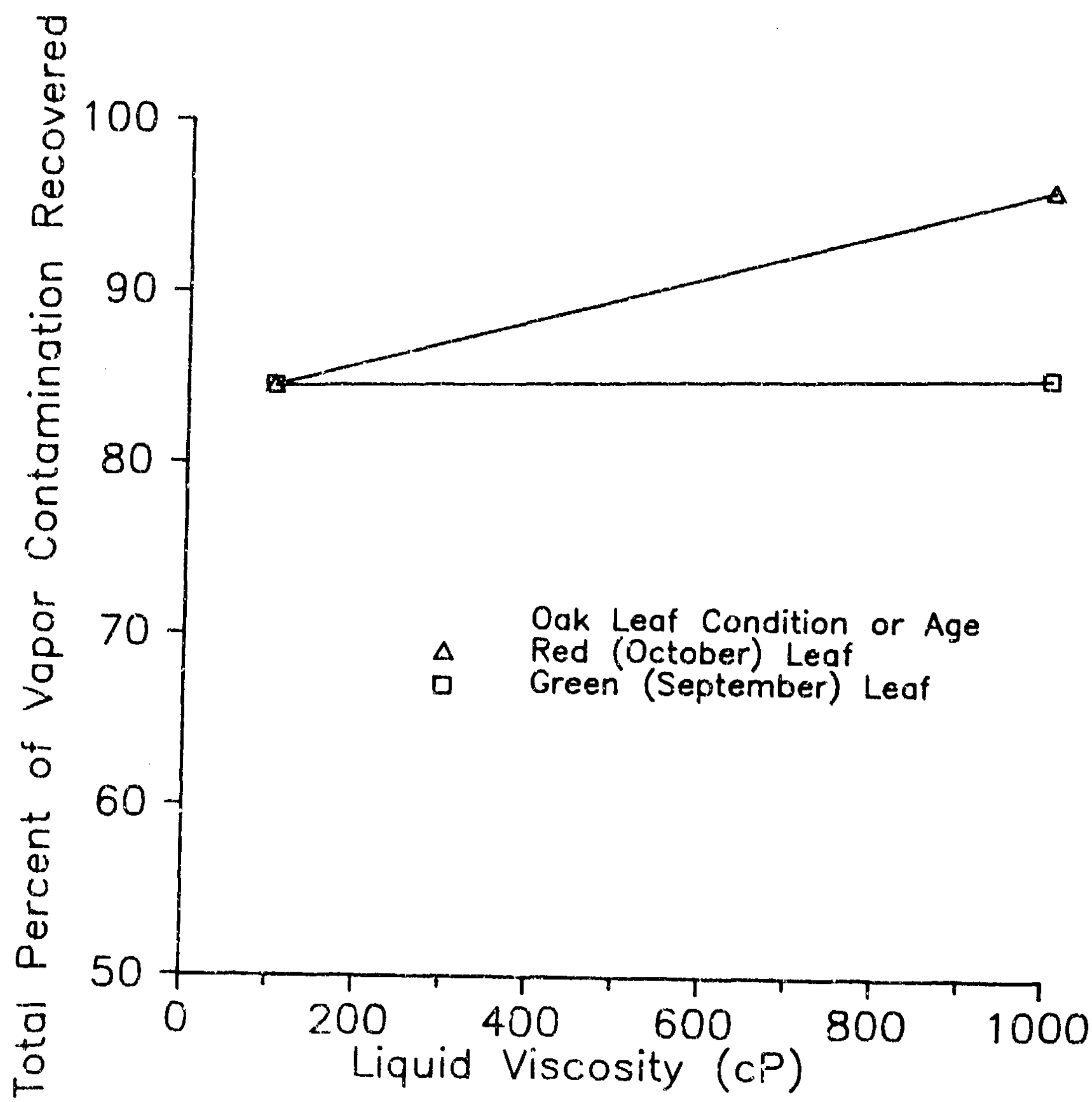

Figure 4. Effect of Interaction Between Liquid Viscosity and the Oak Leaf Condition/Age on the Total Percentage of Vapor Contamination Recovered (Factor 14) in Experiment 2

arises because there is a significant increase (11%) increase in the percent of vapor recovered from the 1,000 cP viscosity DEM droplets deposited on the red oak leaf over the green oak leaf (96 versus 85%), but there is no difference in the percent of vapor recovery of the 100 cP viscosity DEM droplets on the red and green oak leaves. There is also some evidence of this interaction effect on the percent of vapor recovered after 3 and 6 hr, because Factor 14 is significant at 5% in both the ANOVA and HNPP analysis. The only other noteworthy interaction involving the condition of the oak leaf is Factor 34 in Experiment 2. This interaction between the leaf condition and the leaf surface was discussed previously in this report.

In summary, the primary effect that Factor 4 (leaf condition or age) has in this evaporation experiment is on the percent of contamination that is eventually recovered as vapor from the leaves. However, the final amount of agent recovered from the oak leaf surfaces is strongly dependent on the initial viscosity of the liquid droplet, as well as the condition or age of the oak leaf.

6.1.4 Liquid Viscosity (Factor 1).

Although the factorial analysis results of the two statistical analysis methods are in general agreement, there is a major difference between the two in judging the significance of Factor 1, the liquid viscosity of the deposited droplets in these experiments. According to the results of the HNPP of the standardized effects, the liquid viscosity is not as dominant a factor in these experiments as the ANOVA results in Tables 17 to 19 indicate. This was substantiated by a one-way ANOVA on this data.

According to the ANOVA (Factor 1), the liquid viscosity (1,000 cP versus 100 cP) has a significant effect on the percent of contamination recovered as vapor from the leaf surfaces in both experiments (Table 18). After the first hour, there is a significant interaction between the liquid viscosity and the condition of the oak leaf in Experiment 2. This is indicated by the interaction (Factor 14) in the Tables, which is judged to be significant at the 5% level. This interaction effect is also highly significant (0.1% level) for the total percent of contamination recovered from the deposited droplets in Experiment 2. Surprisingly, no such interaction is manifested in Experiment 1. Apparently, the interaction of liquid viscosity with leaf condition (green versus red oak leaves), as examined in Experiment 2, is greater than the interaction of liquid viscosity with leaf type (oak versus hickory) in Experiment 1.

However, according to the HNPP of standardized effects, the liquid viscosity does not have a significant effect on the percent of contamination recovered as vapor from the leaf surfaces in either Experiment 1 or 2 for the 0-6 hr time period. The interaction effect (Factor 14) corresponding to the interaction between the liquid viscosity and the oak leaf condition in Experiment 2 is significant only after evaporation times of 3 hr and longer. Interaction of liquid viscosity with leaf condition is not evident for short evaporation periods (0 to 2 hr) after droplet deposit.

According to ANOVA, the viscosity of the liquid contamination has a significant effect on the half-life of the droplets deposited on the oak and hickory leaf surfaces in Experiment 1 (5% level); however, it has little

effect on the half-life of the droplets deposited on the green and red oak leaves in Experiment 2. The HNPPs of the factorial analysis for the same results indicate there is no significant difference in the half-life of the 100 and 1,000 cP droplets deposited on leaf surfaces in Experiment 1 (208/217 min) and in Experiment 2 (229/225 min).

The HNPP and the ANOVA indicate that the differences in total percentage of contamination recovered from the deposited droplets, with initial viscosities of 100 and 1,000 cP (82.5/85.6%) and (84.5/90.8%) in Experiments 1 and 2, as indicated in Table 17, are significant at the 5% level. The actual differences, approximately 3 and 6%, in the total percent of contamination recovered between the 100 and 1,000 cP viscosity droplets are probably not operationally significant.

The ANOVA and HNPP results indicate that the viscosity of the liquid contamination does not significantly effect the lifetime of the droplet contamination in these experiments. Although the 100 cP droplets consistently exhibited a lifetime that is less than the liftime of 1,000 cP droplets in both Experiment 1 (69 min) and Experiment 2 (38 min), these differences cannot be judged to be significant at the 5% level in the HNPP.

The ANOVA and the HNPP results also indicate that the average evaporation rates of the 100 and 1,000 cP viscosity droplets are not significantly different in the early stage (0 to 2 hr) of the evaporation process in Experiments 1 and 2. However, in the later stage of the process, a statistically significant difference in the average evaporation rate for the 100 and 1,000 cP droplets is evident [e.g., after 6 hr in Experiment 1 (11.2 μg/min and 12.6 μg/min) and in Experiment 2 (11.3 μg/min and 12.9 μg/min)]. It is noteworthy that the average evaporation for the 6-hr period is greater for the 1,000 cP droplets than for the 100 cP droplets. The difference of approximately 1 μg/min amounts to a difference of 10% in the rates, which is probably of little operational significance.

6.2 Droplet Spread Factors.

A factorial analysis was performed on the average spread factor results that were derived for the droplets deposited on the leaf surfaces (Table 3). The results of the Yates' factorial analysis and HNPP of the magnitude of the effects are in Appendix N. The ANOVA tables for the droplet spread factors are in Appendix O. Both the HNPP and the ANOVA indicate that the leaf surface [Factor 3 (top versus bottom surface)] is the most dominant factor affecting the extent of spreading of the liquid droplets on the leaf surface. The droplet spread factors in Experiment 2 are also influenced to some extent by the condition of the leaf surface. Factor 4 is significant at the 1% level, and the interaction between the surface and condition of the oak leaf (Factor 34), which is significant at the 5% level, seems plausible. The other variables in these experiments, over the ranges tested, had no significant effect on the extent of spreading of the droplets on the leaf surfaces. Most important in Experiment 1, the results indicate there was no significant difference in spreading of the droplets deposited on the leaves of the Northern Red Oak and the Skagbark Hickory.

The principal finding in Experiment 1 is that the liquid droplets spread more on the top surface of the leaf than on the bottom surface for

both leaf species (2.66/1.89 and 2.47/1.88 for the top/bottom surfaces of the hickory and oak leaves, respectively). The average spread factor for droplets on the top and bottom surfaces of these leaves are estimated to be 2.56 (+/-0.236 SD) and 1.88 (+/-0.052 SD), respectively.

In addition to the difference in spreading of the droplets on the top and bottom leaf surfaces in Experiment 2, it is also evident there is a difference in spreading of droplets deposited on the green September oak and the red October oak leaves. Moreover, this difference in spreading is greater for the top surfaces than for the bottom surfaces of these leaves, which explains the interaction effect (Factor 34) between the oak leaf surface and the condition of the oak leaf. This is evident in the two-way plot shown in Figure 5. The average spread factor for droplets on the top surface of the green oak leaf is 2.47 (+/-0.292 SD), compared to a spread factor of 1.95 (+/-0.062 SD) for the top surface of red oak leaf. However, the average spread factors for the bottom surfaces of the green and red oak leaves are quite similar (1.88 (+/-0.004 SD) and 1.79 (+/-0.052 SD), respectively). Evidently, this interaction arises because there is apparently little difference in spreading of the droplets on the bottom surfaces of the green and red oak leaves; however, there is a significant difference in spreading of the droplets deposited on the top surfaces of the green and red oak leaves.

The viscosity of the thickened liquid droplet and the wind speed, over the ranges tested, did not affect the spreading of the deposited droplets in these experiments.

In summary, the analyses of the droplet spread factor results indicate first that there is a greater difference between the top and bottom surfaces of the oak and hickory leaves investigated than between the oak and hickory species. Secondly, the spread factor for a leaf can be expected to vary with the condition of the leaf or its age, as indicated by the difference in spreading on the oak leaves in September and October. In general, these droplet spread factor findings correlate well with the evaporative behavior of the deposited droplets.

7. DISCUSSION

Graphs depicting the experimental residual mass and fractional mass of the evaporating droplets deposited on leaf foliage and the predictions of a first order model are in Appendixes G and H. The simple first order expression defined as

$$-dm/dt = Km$$

or

$$m(t) = M(0)e^{-Kt}$$

is described by the initial droplet mass, M(0), and an empirical constant K, the specific rate or velocity constant of the process. Recognizing that at $t = t_{\frac{1}{2}}$, $m(t) = M(0)/2$, this velocity content can then be defined in terms of the half-life of the deposited droplet

$$K = \ln 2/t_{\frac{1}{2}}$$

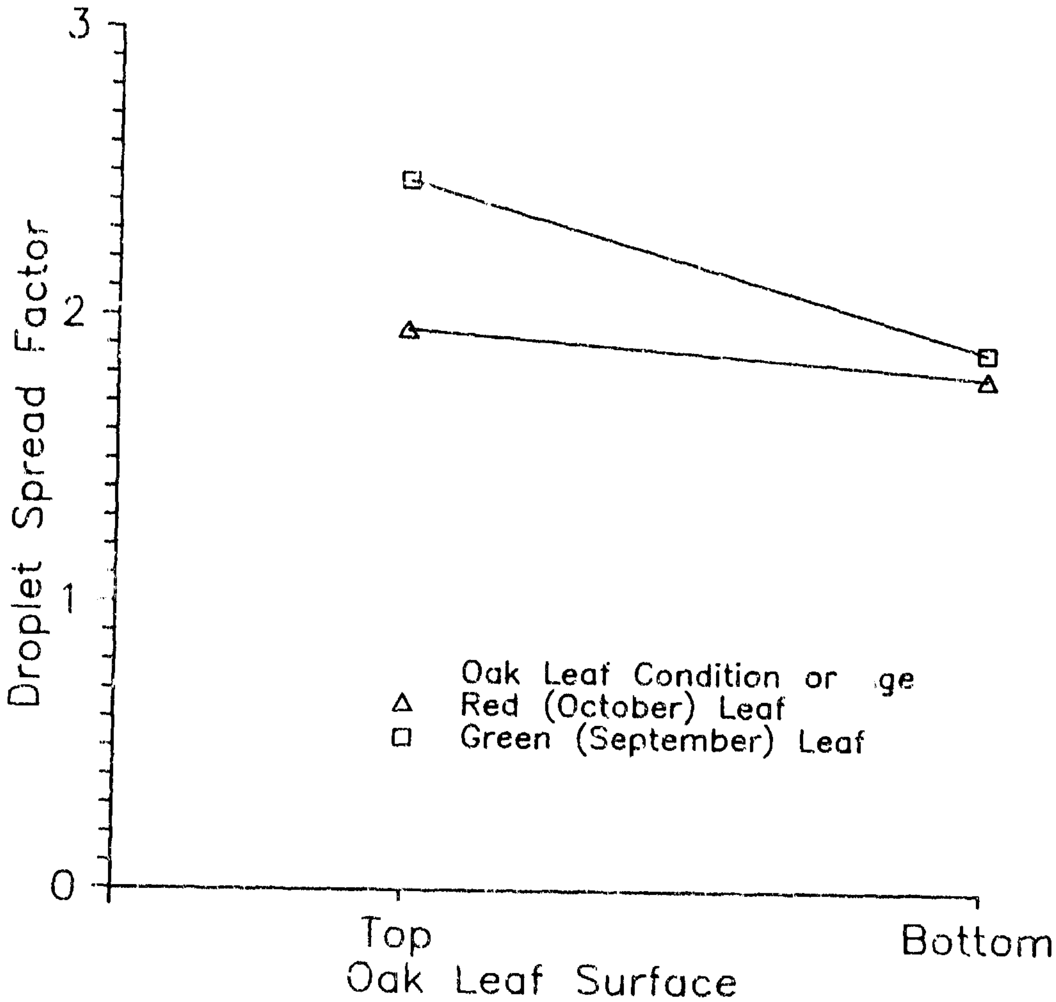

Figure 5. Effect of Interaction Between the Oak Leaf Surface and the Condition/Age on the Leaf Spread Factor (Factor 34) in Experiment 2

This simple expression fits reasonably well the experimental droplet evaporation data obtained in Experiments 1 and 2 during the most significant part of the volatilization period, as shown in Figure 6. This raises the possibility that the evaporation of droplets deposited on leaf foliage can be reasonably well predicted, in general, from the characteristic half-life of the contamination.

The utility of the half-life model in expressing the evaporative behavior of agent droplets on surfaces is not without precedence. For example, in 1928, Walker et al. issued a lengthy report on HD evaporation from soil in field tests conducted between 1922 and 1926 at the Edgewood Arsenal. The evaporation of large H droplets was found to follow a first order decay for about 2 to 3 hr, at temperatures ranging between about 18 and 28 °C.[7] In 1956, Trick showed that the evaporation of GB droplet contamination from wet and dry grounds also followed the first order relationship.[8] In 1986, Podoll et al. found that GD, TGD, VX, and HD droplets deposited on soil and vegetation had similar curves of volatilization. Generally, a slight maximum rise in the volatilization, which they believed corresponded to the initial spreading of the droplet, was followed by a first order decline in the volatilization rate.[9]

The summary of the ANOVA (Table 17) for droplet evaporation Experiments 1 and 2 indicate that the droplet half-life depends principally on two or three factors in these experiments, wherein the temperature was held constant. It seems plausible that the half-life of the simulant agent droplet evaporating at constant ambient temperature might be reasonably well predicted by a simple linear model involving two or three terms; wind speed, leaf surface, and perhaps leaf age or condition. The results of fitting three regression models (Models 1 and 1B--Experiment 1, and Model 2- Experiment 2) to the experimental half-life data obtained in these two experiments are in Appendix P, Tables 1 through 3. In Model 1, the droplet half-life is estimated by the two terms of wind speed (B = -89.4375), the leaf surface factor (C = 36.1875), and the constant 218.6875. In Model 1B, a slightly better estimate of droplet half-life over Model 1 is provided by including the effects due to the liquid viscosity of the droplet (A = 11.1875), the type of leaf (D = -12.6875), and an interaction factor (BC = -11.4375). The multiple correlation factor and standard error of the estimate for Model 1B are 0.9921 and 15.744, when compared to 0.9706 and 26.530 for Model 1. In Model 2, the droplet half-life is estimated by three terms; wind speed (B = -93.1875), leaf surface (C = 20.8175) and an interaction factor (CD = 18.5625) between leaf surface and leaf condition or age, and the constant 233.4375. The multiple correlation for this model is 0.9796, and the standard error of the estimate is 23.047. A comparison of the three model predictions is also shown in Figure P-1, which gives a plot of the experimental droplet half-life versus the predicted droplet half-life. In addition, the best fit linear curve for each of the model predictions is also shown. It is evident from these curves that there is little difference between the predictions of the models on the data in Experiments 1 and 2. This is further exemplified by comparing model predictions for the same droplet half-life in Table P-4. Figure 7 shows a two-way plot of the predictions of droplet half-life based on the wind speed and leaf foliage surface parameters of the most simple model (Model 1). If the leaf surface effect is compared to spreadability of the droplet on the leaf foliage, it is evident that the droplet half-life is inversely proportional to the wind speed and spread

Droplet Evaporation on Northern Red Oak and Shagbark Hickory Leaf Foliage

- Diethyl Malonate Droplets - 2 mm Diameter
- Liquid Viscosity - 100 and 1,000 cP
- Nominal Contamination Density - 30 g/m^2 on the Top and Bottom Leaf Surfaces
- Wind Speeds - 3 and 11 mph
- Air Temperature - 60 °F
- Average Relative Humidity - 42%

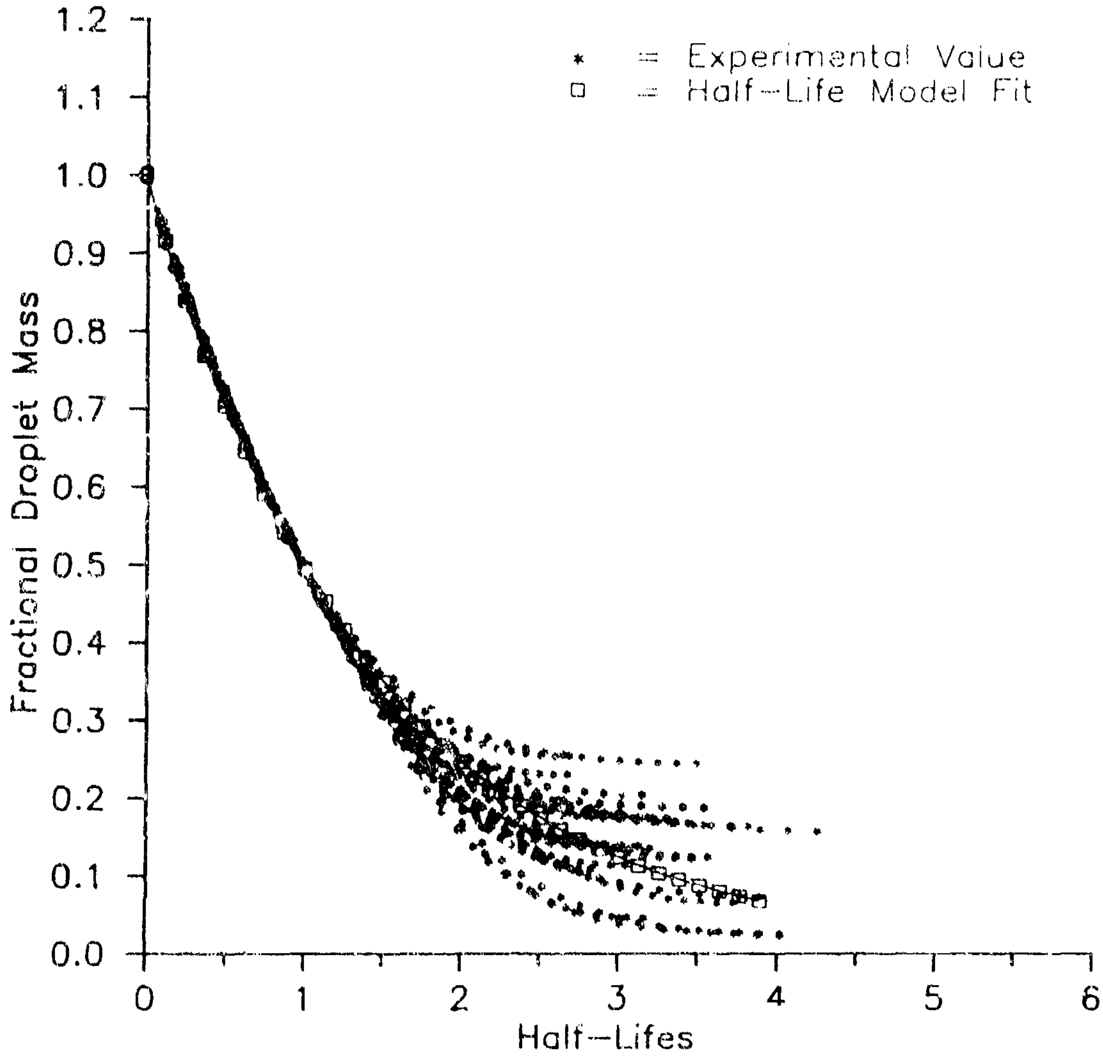

Figure 6. Comparison of Droplet Half-Life Model Predictions with Experimental Leaf Foliage Results (Normalized)

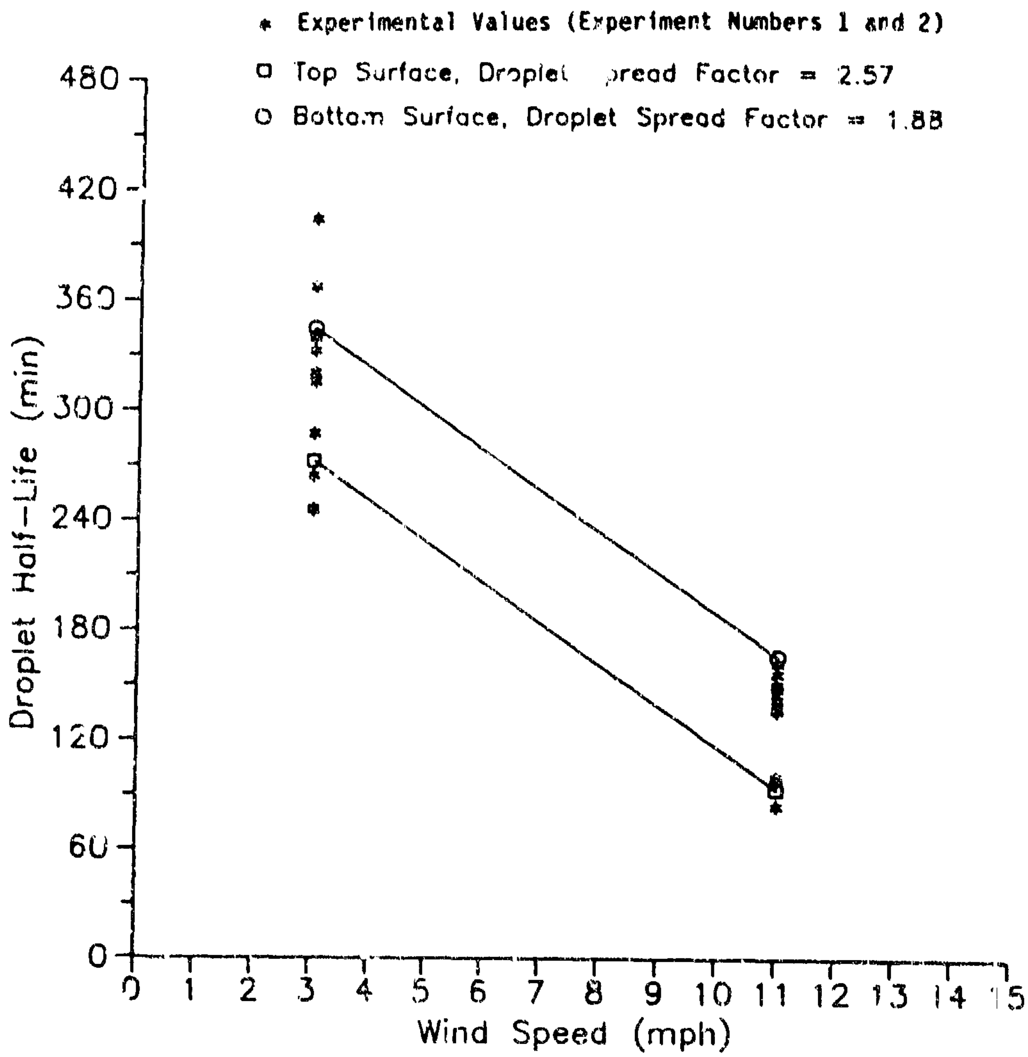

Figure 7. Model 1 Predictions of the Half-Life of a 2 mm Diameter DEM Droplet Deposited on Leaf Foliage

factor of the droplet. At a constant wind speed, the difference in droplet half-life estimates between the top and bottom surfaces of the leaf is explained reasonably well by the difference in droplet spread factor. For example, at 3 mph, the ratio of the estimate droplet half-life on the top leaf surface to the bottom leaf surface is 0.79 and the ratio of the droplet spread factors is 0.73.

In Figure 8, a similiar two-way plot for droplet half-life predictions based on Model 2 indicates that droplet half-life prediction may be complicated by some other chemical/physical leaf properties that are not completely related to the droplet spread factor. For a given month (September/October), the ratio of droplet half-life estimates for the top and bottom leaf surfaces is predicted reasonably well by the inverse ratio of the droplet spread factors. However, even though the spread factors of the green September oak leaf are larger than those of the red October oak leaf for both surfaces, the estimated half-lives of the green September oak leaf are also greater than that of the red October oak leaf. This explains the need for the interaction term between leaf surface and leaf condition or age in predicting droplet half-life. Figure 8 also indicates that the half-life for droplets deposited on the top surface of the red September oak leaf, with a spread factor of 2.27, is practically the same as for droplets deposited on the bottom surface of the green October oak leaf, with a spread factor of 1.79. Obviously, the similarities and differences in droplet evaporation on leaf foliage cannot be explained by the droplet spread factor alone.

Figures 9 and 10 show a comparison of the experimental and Model 1B predictions of simulant agent droplet half-life for thickened simulant droplets of 100 and 1,000 cP deposited on the top and bottom surfaces of the Northern Red Oak and Shagbark Hickory. Model 1B is an extension of Model 1 and includes the effects attributed to liquid viscosity (A = +11.1875), the leaf species (D = +12.6875), and an interacton effect (BC = -11.4375) between the wind speed and the leaf surface. Depending on the wind speed, droplet half-life estimates from this model indicate that droplet half-life is approximately 60-90 min longer on the bottom leaf surface than on the top leaf surface for both leaf types. There is also a slight increase in half-life expectancy for droplets with a viscosity of 1,000 cP (30 min) and for droplets deposited on the oak leaf (30 min) as well. However, the increased sensitivity of Model 1B is based on a limited amount of evaporation and spread factor data. The increase in droplet half-life expectancy does not appear to be warranted by small differences in droplet spread factors for 100 and 1,000 cP liquid droplets deposited on both the oak and hickory leaf surfaces (Figures 9 and 10). Additional droplet evaporation and spread factor data are needed to corroborate these findings. A 30-60 min refinement in predicting the half-life of droplets is probably not important to military operations in the field. Therefore, the more simple model for estimating droplet half-life is probably satisfactory for predicting the persistency of droplets on leaf foliage when corrected for temperature and droplet size.

In summary, the simple first order mathematical expression is adequate for representing the disappearance of a thickened liquid agent simulant droplet from a contaminated leaf foliage surface during the evaporation of the thin liquid film formed on the leaf surface. Although the comparison of experimental data and model predictions are somewhat limited due to the

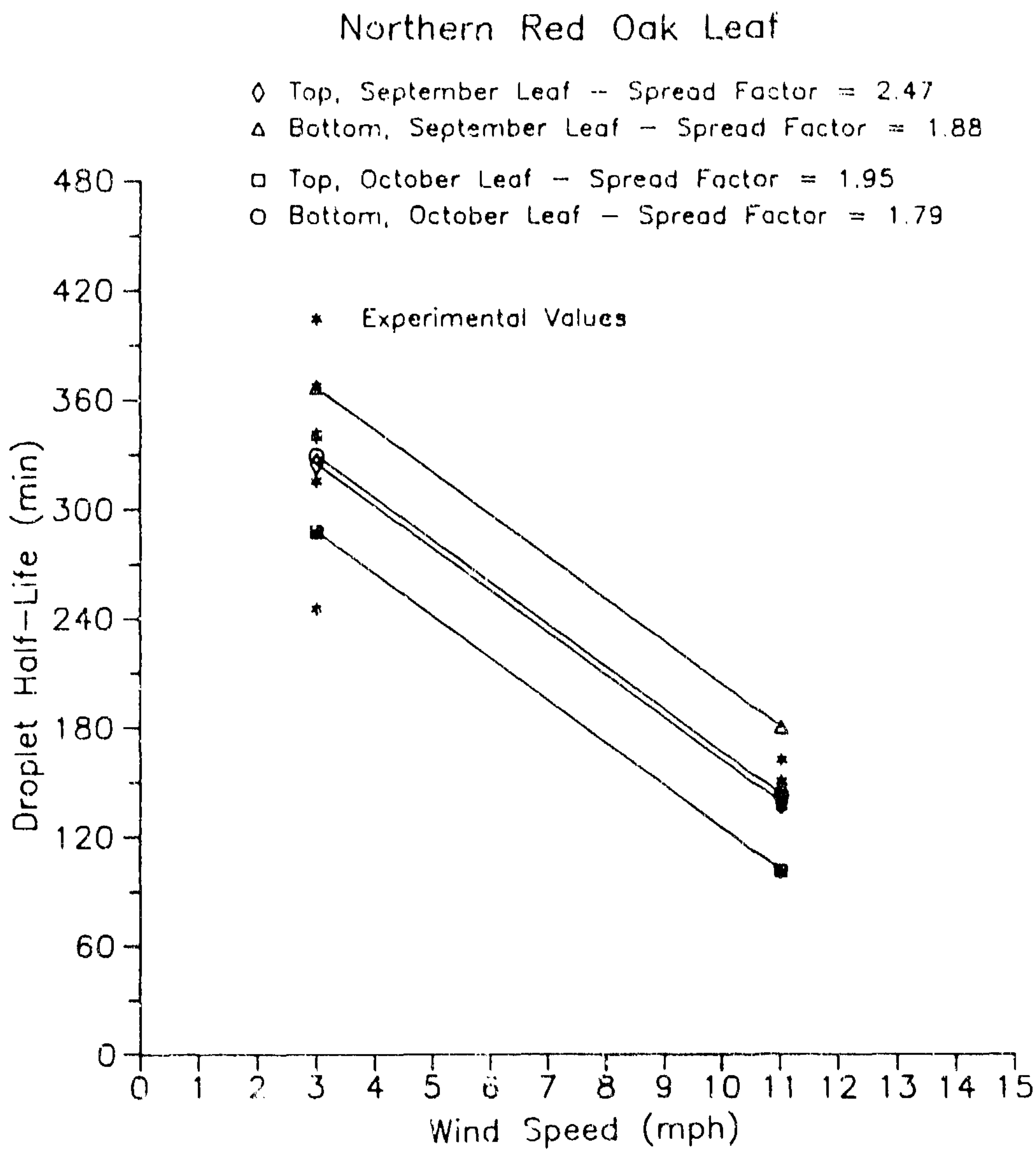

Figure 8. Model 2 Predictions of the Half-Life of a 2 mm Diameter DEM Droplet Deposited on Leaf Foliage

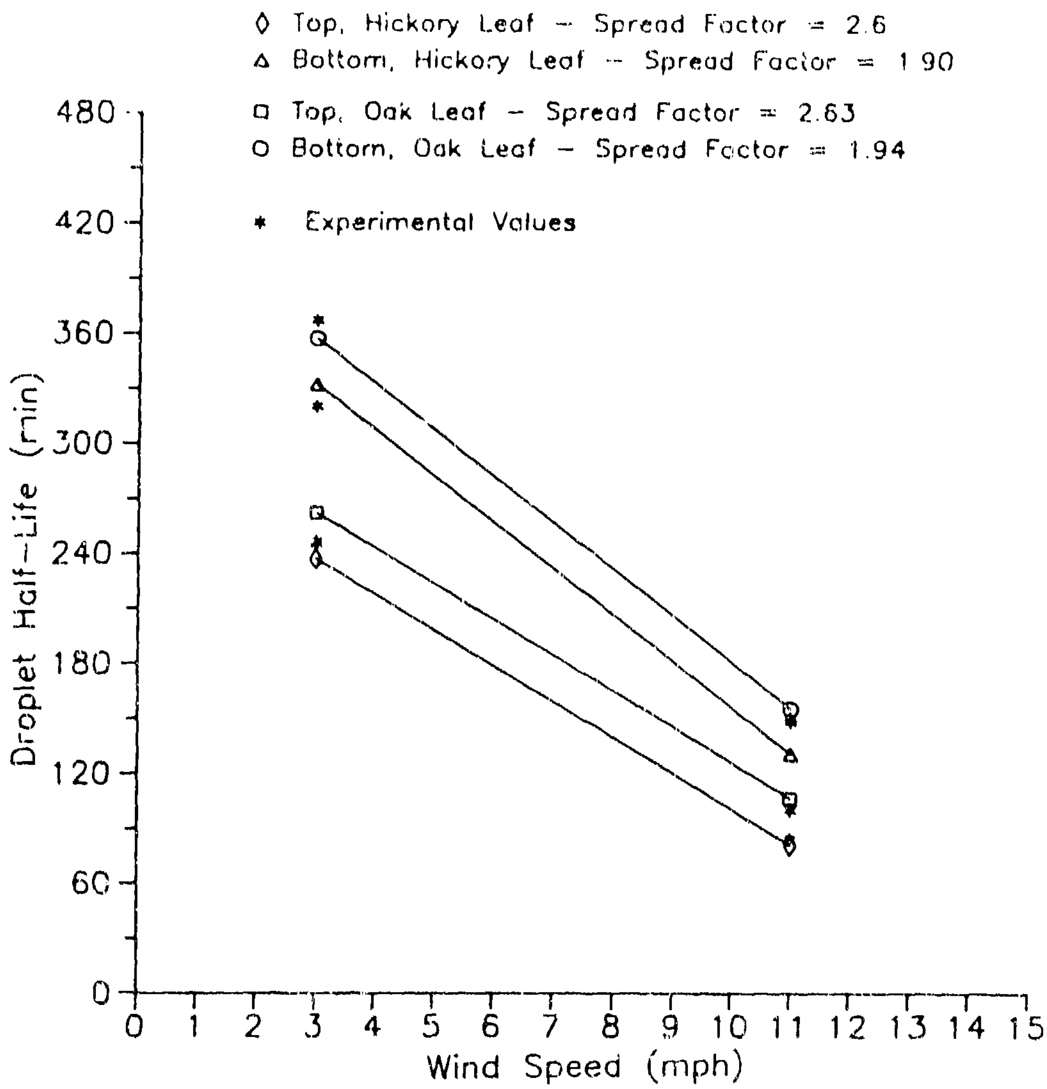

Figure 9. Model 1B Predictions of the Half-Life of a 100 cP, 2 mm Diameter DEM Droplet Deposited on Leaf Foliage

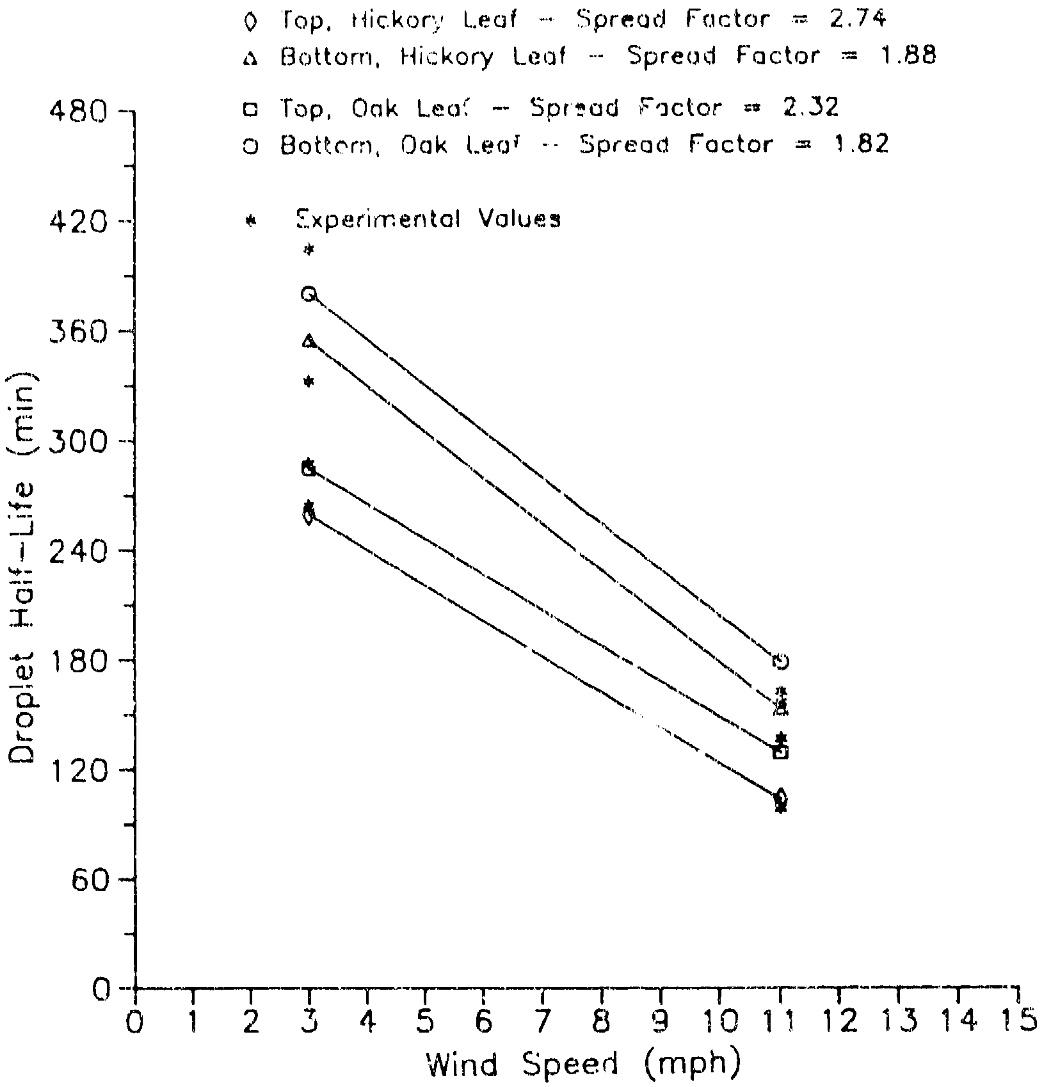

Figure 10. Model 1B Predictions of the Half-Life of a 1000 cP, 2 mm Diameter DEM Droplet Deposited on Leaf Foliage

limited scope of this study [2 mm diameter droplet of 100 and 1,000 cP thickened DEM deposited on only two varities of leaf surfaces (Northern Red Oak and Shagbark Hickory) at only one ambient temperature, 60 °F], it is expected that the half-life model will also hold for other corditions (i.e., droplet size, ambient temperature, etc.) where evaporation is occurring from a thin shrinking film of liquid on a relatively nonabsorbing surface. Predictions of the half-life of deposited droplets on leaf foliage in these experiments depend primarily on the wind speed and the leaf surface (top/bottom) and, to a lesser extent, on type of the leaf (oak/hickory) and leaf condition or age (September oak/October oak). The influence of the leaf foliage is manifested to a large extent by the spreading of the deposited liquid droplet mass and the liquid surface area assumed. Unfortunately, the spreading of agents on surfaces is difficult to predict because of the sensitivity of spreading on the chemical and the physical state of the leaf foliage. In general, of the most critical factors that affect agent droplet volatilization (i.e. wind speed droplet size, and droplet spreadability), the spreadability of the deposited droplets on surfaces is the one that is largely unknown. This is an area that needs to be explored further because the rate of sorption and biotransformation of the liquid agent droplets are probably also affected by the spreadability of the deposited droplet.

8. CONCLUSIONS

A clearer understanding of the effects of liquid viscosity of deposited droplets (100 cP versus 1,000 cP), the wind speed (3 mph versus 11 mph), and particularly the properties of contaminated leaf foliage (namely leaf surface top versus bottom), leaf type (oak versus hickory) and the condition or age (green September leaf versus red October leaf) on the evaporation and spreading characteristics of deposited droplets of thickened diethyl malonate (DEM) has been obtained.

A simple first order mathematical expression is adequate for representing the disappearance of a thickened liquid agent simulant droplet from contaminated leaf foliage surface during the evaporation of the thin liquid film that is formed on the leaf surface.

Wind speed is the most dominant factor affecting the amount, rate of return, and duration of the hazard for 2 mm diameter droplets of thickened DEM deposited on a leaf surface at 60 °F ambient temperature. The effect produced by wind speed is predominantly a direct effect, and the wind speed factor alone can explain most of the total variation (80 and 88%) in the droplet evaporation characteristics studied in the two factorial experiments. Only one exception was found. In Experiment 2, the the total percentage of contamination recovered is also strongly dependent on the viscosity of the deposited liquid droplet and the condition or age of the oak leaf.

The differences in droplet weathering on contaminated leafy surfaces at 3 and 11 mph are significant. Initially (0-3 hr), the average droplet evaporation rate of the deposited 2 mm diameter droplets at 3 mph is one-half the evaporation rate of the deposited droplets exposed to 11 mph wind speed. However, after 6 hr, the average droplet evaporation rate at 3 mph is nearly two-thirds the droplet evaporation rate at 11 mph. The difference in lifetime of the deposited droplets at 3 and 11 mph is approximately 10 hr, and there is a 3-hr difference in the half-life of the 2-mm droplets.

The leaf surface (top versus bottom) is the second most important factor affecting the evaporation behavior of the deposited DEM droplets. The DEM droplets spread substantially more on the top surfaces of the oak and hickory leaves than on the bottom surfaces. This in turn affects the initial rate of evaporation of the deposited droplet, especially at the higher wind speed, up to 6 hr (the last time increment in the analysis) after contamination. However, the differences in the percent of contamination recovered from the top and bottom leaf surfaces are negligible (approximately 10 and 5%) in Experiments 1 and 2. The long-term yields associated with the droplet contamination (i.e., the total amount of contamination that evolves and, surprisingly, the lifetime of the deposited droplets) are not dependent on the leaf surface. Thus, the leaf surface does not have to be considered to predict the persistency of the hazard in these experiments.

The leaf type (Northern Red Oak versus Shagbark Hickory) has only a minor effect on the evaporation of deposited DEM droplets. The differences in droplet evaporation behavior for droplets deposited on oak and hickory leaves are not considered to be operationally significant.

The condition or age of the oak leaf primarily affects the percent of the liquid droplet contamination that eventually evolves. However, the final amount of liquid agent that is recovered as vapor from the oak leaf is strongly dependent on the initial viscosity of the liquid droplet, as well as the condition or age of the leaf.

The spread factor of a thickened DEM droplet deposited on a leaf surface is affected mainly by the leaf surface and the condition or age of the leaf. The leaf surface (top versus bottom) is the most dominant factor. Surprisingly, the difference in spreading of a deposited droplet is greater between the top and bottom surfaces of the leaves investigated than between the leaf types. Liquid droplets spread to a greater extent on the top surface than on the bottom surface of both leaf species that were tested. The average spread factor for a deposited droplet is estimated to be 2.56 (+/-0.236 SD) on the top surface and 1.88 (+/-0.052 SD) on the bottom surfaces of both the oak and hickory leaves.

However, there is also evidence that the condition or age of the leaf affects the the spreading of the droplet on the leaf surface. A significant difference in spreading of droplets deposited on the green September oak leaf and the red October oak leaf was detected. This is revealed by the interaction effect between leaf surface and leaf condition in Experiment 2. The average spread factor for a droplet deposited on the top surface of a green September oak leaf is 2.47 (+/-0.292 SD) compared to 1.95 (+/-0.062 SD) on the top surface of a red October oak leaf. However, the average spread factors for the bottom surface of the green and red oak leaves are similar [1.88 (+/-0.004 SD) and 1.79 (+/-0.052 SD)].

The viscosity of thickened DEM (100/1,000 cP) and the wind speed (3-11 mph) over the ranges tested had no detectable effect on the extent of spreading of a droplet deposited on the oak and hickory leaves.

9. RECOMMENDATION

Experimental droplet evaporation and spread factor studies should be continued with DEM and other persistent liquid CW agent/simulants deposited on other natural and man-made surfaces that have not been investigated in this research project to better quantify their spreadability, volatilization, persistency, and expected recoveries. These studies should be accomplished in order to ascertain and classify the liquid/vapor threats posed by droplets of the agent on these surfaces under a variety of atmospheric and surface conditions.

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APPENDIX A

A COMPUTER PROGRAM FOR TRANSFORMING MIRAN IA VAPOR ANALYZER VOLTAGE READINGS ON AN IBM PC/AT

```
D Line# 1       7                          Microsoft FORTRAN77 V3.31 August 1985
                PROGRAM MIRAN
        C       ********** PROGRAM TO ANALYZE MIRAN VAPOR ANALYZER DATA *********
        C       ******** FROM WINDTUNNEL DROPLET EVAPORATION EXPERIMENTS ********
        C
        C
        C       WINDTUNNEL CONDITION:
        C       DYNAMIC AREA = 10.25 X 3.75 SQ INCHES (NOMINAL)
        C       AREAH=10.5 X 4.0 SQ INCHES (UPPER BOUND)
        C       AREAL=10.0 X 3.0 SQ INCHES (LOWER BOUND)
        C
        C
        C
        C       PROGRAM OUTPUT REPORT:
        C
        C       (1)  OUTPUT VOLTAGE DATA FROM MIRAN 1A ANALYZER.
        C
        C       (2)  VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED
        C       DROPLETS, (PPM/AB BASED ON MIRAN MASS BALANCE).
        C
        C       (3)  VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED
        C       DROPLETS, (PPM/AB BASED ON MIRAN CALIBRATION DATA).
        C
        C       (4)  CUMULATIVE DOSAGE DERIVED FROM A UNIFORM ARRAY OF DEPOSITED,
        C       (PPM/AB BASED ON MASS BALANCE).
        C
        C       (5)  CUMULATIVE DOSAGE DERIVED FROM A UNIFORM ARRAY OF DEPOSITED,
        C       (PPM/AB BASED ON MIRAN CALIBRATION DATA).
        C
        C       (6)  EVAPORATION HISTORY OF TEST DROPLET MEASURED & THEORETICAL.
        C
        C       (7)  EVAPORATION HISTORY OF DEPOSITED TEST DROPLET.
        C
        C       (8)  SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION.C
        C
        C       (9)  EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY.
        C
        C       (10) CHECK OF INPUT AND OUTPUT PARAMETER VALUES.
        C
        C       (11) EFFECTIVE WINDSPEEDS FOR TEST TO ACHIEVE PPM/AB OF MIRAN
        C       CALIBRATION FOR ASSUMED WINDTUNNEL DYNAMINC CROSS-SECTIONAL AREAS.
        C
        C
        C
                CHARACTER*1 ANSWER,DASH
                CHARACTER*14 FNAME
                CHARACTER*72 LL1,LL2,LL3,LL4
                INTEGER NQ,NSLT,HTBL,DISPLAY,NOPTS
                REAL ENDV,ENDVT
        C
                DIMENSION VOLT(45),TMEAC(40),VPPMT(40),VCDT(40),VPPMD(40),
               &VCDD(40),CPMT(40),CCDT(40),CPMD(40),CCDD(40),CUMDT(40),CUMDD(40),
               &CCUMT(40),CCUMD(40),SUMVS(40),EVAPN(40),EVAPM(40),IVOL(45),
               &VOLTN(40),EVPN5(40),EVPM5(40),EVPRN(40),EVPRM(40),TIMER(40),
               &XSQMT(40),XGSQM(40),CSQMT(40),CGSQM(40),FRMT(40),FRTM(40)
        C
        C
```

```
    1 CONTINUE
      DATA VOLT,TMEAC,VPPMT,VCDT,VPPMD,
     &VCDD,CPMT,CCDT,CPMD,CCDD,CUMDT,CUMOD,
     &CCUMT,CCUMD,SUMVS,EVAPN,EVAPM,
     &VOLTN,EVPN5,EVPM5,EVPRN,EVPRM,TIMER,
     &FRTM,XSQMT,XGSQM,CSQMT,CGSQM,FRHT,IVOL/1165*0.0,45*0/
C
      DASH = '-'
C
C     READ EXPERIMENTAL CONDITIONS AND VALUES FROM DATA FILE ON DRIVE B
C
      WRITE(*,1500)
      WRITE(*,1510)
      WRITE(*,1515)
      WRITE(*,1520)
      READ(*,30) FNAME
C
 1519 WRITE(*,1521)
      WRITE(*,1522)
      WRITE(*,1523)
      WRITE(*,1524)
      WRITE(*,1525)
      WRITE(*,1526)
      READ(*,1529) NSLT
      IF((NSLT .NE. 1) .AND. (NSLT .NE. 2) .AND. (NSLT .NE. 3) .AND. (N
     &SLT .NE. 4)) GOTO 1519
C
      WRITE(*,1531)
      WRITE(*,1532)
      WRITE(*,1533)
      READ(*,1529) DISPLAY
C
C     READ FILE USES UNIT 5
C
      OPEN(5,FILE=FNAME,STATUS='OLD')
      READ(5,30) LL1
      READ(5,30) LL2
      READ(5,30) LL3
      READ(5,30) LL4
C
      READ(5,35) GM1TP,GM2TP,GM3TP,DPPT,NCODE,CODEL,AIRSP,CAL
C
C     ENTER TEST INFORMATION PERTAINING TO MIRAN ANALYZER RECORD TO BE
C     ANALYZED:
C
      READ(5,40) ABPV,MINV,NOPTS,ENDVT
      ENDV = ENDVT
C
C     ENTER VALUES FROM VOLT VERSUS TIME CURVE **AS MILLIVOLT**
C
      READ(5,45) (IVOL(I),I=1,NOPTS)
      CLOSE(5)
C
C     CONVERT INPUT COLUMN MATRIX IVOL (MILLIVOLTS) TO COLUMN MATRIX
C     VOLT (VOLTS) E.G. 40 TO .040
C
```

```
      DO 50 I = 1,NOPTS
      VOLT(I) = IVOL(I)/1000.0
   50 CONTINUE
      WRITE(*,51)
      DO 60 I = 1,15
      WRITE(*,52) I,IVOL(I),VOLT(I),I+15,IVOL(I+15),VOLT(I+15),I+30,IVOL
     &(I+30),VOLT(I+30)
   60 CONTINUE
      WRITE(*,53)
      WRITE(*,55)
      WRITE(*,57)
   70 READ(*,30) ANSWER
      IF((ANSWER .NE. 'Y') .AND. (ANSWER .NE. 'y') .AND. (ANSWER .NE. 'N
     &') .AND. (ANSWER .NE. 'n')) GOTO 70
      IF((ANSWER .EQ. 'N') .OR. (ANSWER .EQ. 'n')) GOTO 1550
      IF((ANSWER .EQ. 'Y') .OR. (ANSWER .EQ. 'y')) CONTINUE
C
C     COMPUTE CONTAMINATION DENSITY LEVEL PER TRAY (GRAMS/SQ METER)
C
      GPM21 = (GM1TP/.169) + .00
      GPM22 = (GM2TP/.169) + .05
      GPM23 = (GM3TP/.169) + .05
      GPM24 = ((GM2TP + GM3TP)/.3387) + .05
C
C     ASSIGN LIQUID DENSITY TO LIQUIDS (DIETHYL MALONATE = 1.05
C     METHYL SALICYLATE = 1.18 G/CC)
C
      DENL1 = 1.05
      DENL2 = 1.18
C
C     ASSIGN PERCENT COPOLYMER THICKENER
C
      CPD1L = 2.8
      CPD1H = 4.8
      CPM2L = 2.0
      CPM2H = 4.5
C
C     ASSIGN LIQUID CONVERSION FACTOR FOR CONVERTING PPM TO MICROGRAMS
C     PER CUBIC METER FOR MIRAN OPERATING TEMERATURE OF 100 DEG F.
C
      COVL1 = 6.278E3
      COVL2 = 5.963E3
C
C     CALIBRATION INFORMATION FOR MIRAN RELATING PPM TO ABSORBANCE
C     VALUE
C
      IF(CODEL .EQ. 100.) GO TO 100
      IF(CODEL .EQ. 1000.) GO TO 110
      IF(CODEL .EQ. 200.) GO TO 120
      IF(CODEL .EQ. 2000.) GO TO 130
  100 PERCP =CPD1L
  105 DENLQ = DENL1
      COVLQ = COVL1
      PRPAB = CAL
      GO TO 150
  110 PERCP = CPD1H
```

```
      GO TO 105
120   PERCP = CPM2L
125   DENLQ = DENL2
      COVLQ = COVL2
      PRPAB = CAL
      GO TO 150
130   PERCP = CPM2H
      GO TO 125
150   CONTINUE
C
C     COMPUTE DROPLET MASS FROM LIQUID MASS AND NUMBER OF DROPLETS
C     ON EACH TRAY (GRAMS)
C
      TM1 = GM1TP/DPPT
      TM2 = GM2TP/DPPT
      TM3 = GM3TP/DPPT
      TTMT = TM1 + TM2 + TM3
C
C     COMPUTE AVERAGE VALUE OF TEST DROPLET MASS (GRAMS)
C
      IF(NCODE .GE. 6) GO TO 160
      ETDPM = TTMT/3.0
C
C     COMPUTE STANDARD DEVIATION OF TEST DROPLET MASS
C
      SDMAS = (((TM1-ETDPM)**2+(TM2-ETDPM)**2+(TM3-ETDPM)**2)/2.0)** .5
C
C
C     COMPUTE STANDARD ERROR OF MEAN TEST DROP MASS
C
      SEMAS = SDMAS/1.73205
C
C     COMPUTE EQUIVALENT DROPLET DIAMETER FOR MEAN MASS (MM)
C
      EQDPD = (((1.90985*ETDPM)/DENLQ)**.33333)*10
C
C     DETERMINE THE APPROPRIATE CONVERSION FACTOR FOR SUBSTRATE
C     ANALYZED CORRESPONDING TO VOLT MATRIX... INFORMATION
C
      IF(NCODE .LT. 6) GO TO 165
160   ETDPM = TTMT/2.0
      SDMAS = (((TM2-ETDPM)**2 +(TM3-ETDPM)**2)/1.0)**.5
      EQDPD = (((1.90985*ETDPM)/DENLQ)**.33333)*10
165   IF(NCODE .EQ. 1) GO TO 200
      IF(NCODE .EQ. 2) GO TO 220
      IF(NCODE .EQ. 3) GO TO 240
      IF(NCODE .EQ. 4) GO TO 260
      IF(NCODE .EQ. 5) GO TO 280
      IF(NCODE .EQ. 6) GO TO 285
C
C     DATA FROM THREE SUBSTRATES REDUCED TO SINGLE TRAY EQUIVALENT
C
200   TVCF3 = GM3TP/(GM1TP + GM2TP + GM3TP)
      VGPT = GPM23
      NTRAY = 3
      TRAYM = GM3TP
```

```
      NSET = 3
      EXPGM = GM1TP + GM2TP + GM3TP
      GO TO 290
C
C     VGPT IS A CONVERSION FACTOR USED TO CONVERT DATA TO GRAM/SQ METER
C     BASIS.
C     NTRAY IS ID NUMBER BY POSITION IN WINDTUNNEL TEST 1 UPSTREAM ETC.
C     NSET IS NUMBER OF SUBSTRATES USED FOR VOLT INPUT DATA.
C
C     DATA INPUT CORRESPONDS TO 2 AND 3 SUBSTRATES REDUCED TO SINGLE
C     TRAY EQUIVALENT
C
  220 TVCF3 = GM3TP/(GM3TP + GM2TP)
      VGPT = GPM23
      NTRAY = 3
      TRAYM = GM3TP
      NSET = 2
      EXPGM = GM3TP + GM2TP
      GO TO 290
C
C     DATA INPUT CORRESPONDS TO 3 AND 1 SUBSTRATES REDUCED TO SINGLE
C     TRAY EQUIVALENT
C
  240 TVCF3 = GM3TP/(GM3TP + GM1TP)
      VGPT = GPM23
      NTRAY = 3
      TRAYM = GM3TP
      NSET = 2
      EXPGM = GM3TP + GM1TP
      GO TO 290
C
C     DATA INPUT CORRESPONDS TO 1 SUBSTRATE AT POSITION 3 IN TUNNEL
C
  260 TVCF3 = 1.0
      VGPT = GPM23
      NTRAY = 3
      TRAYM = GM3TP
      NSET = 1
      EXPGM = GM3TP
      GO TO 290
C
C     DATA INPUT CORRESPONDS TO 1 SUBSTRATE AT POSITION 1 IN TUNNEL
C
  280 TVCF3 = 1.0
      VGPT = GPM21
      NTRAY = 1
      TRAYM = GM1TP
      NSET = 1
      EXPGM = GM1TP
      GO TO 290
C
C     DATA INPUT CORRESPONDS TO TWO SUBSTRATES AT POSITIONS 2 & 3
C
  285 TVCF3 = 1.0
      VGPT = GPM24
      NTRAY = 4
```

```
      TRAYM = GM3TP + GM2TP
      NSET = 6
      EXPGM = TRAYM
      DPPT = DPPT*2
      GO TO 290
C
C     SELECT APPROPRIATE TEST MASS
C
  290 CONTINUE
C
      IF(NTRAY - 2) 300,310,315
  300 TMASS = TM1
      GOTO 330
  310 TMASS = TM2
      GOTO 330
  315 IF(NTRAY - 4) 320,325,325
  320 TMASS = TM3
      GOTO 330
  325 TMASS = (TM2 + TM3)/2
C
C     CORRECT THE LIQUID DROP MASS ON SUBSTRATE TO ACCOUNT FOR PERCENT
C     POLYMER THICKENER WHICH IS ASSUMED TO BE NON-VOLITILE INGREDIENT
C
  330 CMASS = TMASS*(100. - PERCP)/100.0
C
C     DETERMINE THE CUMULATIVE DISTRIBUTION (VOLT.MIN) FOR SINGLE
C     SUBSTRATE USING TRAPEZOIDAL RULE
C
      SUMVS(1) = 0.0
      VOLTM = 0.0
      DO 400 I = 2,NOPTS
C
C     TVCF3 PRODUCES THE OUTPUT DATA EQUIVALENT TO A SINGLE SUBSTRATE
C
      VOLTM = ((VOLT(I)+VOLT(I-1))/2)*TMINV*TVCF3
      SUMVS(I) = SUMVS(I-1) + VOLTM
C
C     TIME INCREMENT FOR CORRESPONDING CUMULATIVE VOLT.MIN FOR
C     TABULATING
C
      TMEAC(I) = (TMINV * I) - TMINV
  400 CONTINUE
C
C     ASSIGN THE TOTAL VALUE OF CUMULATIVE DISTRIBUTION
C
      IF((NCODE .GE. 6) .AND. (ENDVT .EQ. 1.0)) GOTO 654
      GOTO 420
  405 CONTINUE
C
C     ASSIGN A VALUE TO TOTAL CUMULATIVE VOLT.MIN FOR MIRAN VOLTAGE DAT
C
      ACVTM = (((100.-PERCP)/100.)*EXPGM*1E6)/(ABPV*PRPAB*COVLQ*Y)
      IF((NCODE .GE. 6) .OR. (ENDVT .EQ. 1.0)) GOTO 422
  420 ACVTM = SUMVS(NOPTS)
  422 CONTINUE
C
```

```
      NSET = 7
      ENDVT = 0.0
C
C     CALCULATE THE HALF-LIFE FOR EVAPORATION USING CUMULATIVE VOLTAGE
C     READINGS, SUMVS(I)
C
      N = NOPTS - 1
      DO 500 I = 1,N
      HAFVT = SUMVS(I)/ACVTM
      IF (HAFVT .LT. .5) GO TO 500
      IF (HAFVT .EQ. .5) GO TO 520
      T2 = TMEAC(I)
      T1 = TMEAC(I-1)
      V2 = SUMVS(I)/ACVTM
      V1 = SUMVS(I-1)/ACVTM
C
C     COMPUTE TIME VALUE BY LINEAR INTERPOLATION METHOD
C
      HAFTM = ((((T2 - T1) * (.5 - V1))/(V2 - V1)) + T1)
      GO TO 530
  500 CONTINUE
  520 HAFTM = TMEAC(I)
  530 CONTINUE
C
C     EVAPORATION RATE AVERAGED OVER ONE HALF-LIFE (MICROGRAMS/MIN)
C
      ERHLF = ((CMASS/(-2.))/HAFTM)*1E6
C
C     CALCULATE NORMALIZED EVAPORATION CURVE FOR SINGLE DROPLET OF
C     SPECIFIED SIZE
C
      DO 550 I = 1,NOPTS
      VOLTN(I) = SUMVS(I)/ACVTM
      EVAPN(I) = 1 - VOLTN(I)
C
C     CALCULATE THE MASS OF DROPLET REMAINING AS A FUNCTION OF
C     EVAPORATION TIME, EXCLUDING NON-VOLATILE POLYMER CONTENT
C
      EVAPM(I) = EVAPN(I)*CMASS
  550 CONTINUE
C
C     CALCULATE THE EVAPORATION HISTORY OF THE TEST DROPLET ASSUMING
C     FIRST ORDER MODEL USING HALF-LIFE TIME
C
      CK = ALOG(2.0)/HAFTM
      DO 600 I = 1,NOPTS
      TK = CK*TMEAC(I)
C
C     NORMALIZED VALUES
C
      EVPN5(I) = EXP(-TK)*1.0
C
C     LIQUID MASS REMAINING (GRAMS)
C
      EVPM5(I) = EVPN5(I)*CMASS
  600 CONTINUE
```

```
D Line# 1      7                              Microsoft FORTRAN77 V3.31 August 1985
         C      PRINTOUT MIRAN ANALYZER VALUES
         C      //////////// TABLE 1 ////////////
         C
                NTBL=1
                DO 610 IT=1,NSLT
 1              IF(IT .EQ. 1) THEN
 1              OPEN(6,FILE='CON')
 1              ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
 1              OPEN(6,FILE='TABLE.1',STATUS='NEW')
 1              ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
 1              GOTO 610
 1              ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
 1              OPEN(6,FILE='PRN')
 1              ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
 1              GOTO 610
 1              ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
 1              OPEN(6,FILE='PRN')
 1              ENDIF
 1              IF(IT .EQ. 1) THEN
 1              WRITE(6,804) NTBL
 1              ELSE
 1              WRITE(6,805)
 1              ENDIF
 1              IF(IT .EQ. 1) THEN
 1              WRITE(6,30) LL1
 1              WRITE(6,30) LL2
 1              WRITE(6,30) LL3
 1              WRITE(6,30) LL4
 1              ELSE
 1              WRITE(6,810) LL1
 1              WRITE(6,810) LL2
 1              WRITE(6,810) LL3
 1              WRITE(6,811) LL4
 1              ENDIF
 1              IF(IT .EQ. 1) THEN
 1              WRITE(6,919)
 1              WRITE(6,923)
 1              WRITE(6,931)
 1              WRITE(6,936)
 1              ELSE
 1              WRITE(6,918)
 1              WRITE(6,922)
 1              WRITE(6,930)
 1              WRITE(6,935)
 1              ENDIF
 1              DO 650 I = 1,NOPTS
 2              TIM = ((TMINV*I) - TMINV)
 2              V = VOLT(I)
 2              CV = SUMVS(I)
 2              VN = VOLTN(I)
 2              IF(IT .EQ. 1) THEN
 2              WRITE(6,941) TIM,V,TIM,CV,VN
 2              ELSE
 2              WRITE(6,940) TIM,V,TIM,CV,VN
 2              ENDIF
 2       650    CONTINUE
```

```
1           IF(IT .EQ. 1) THEN
1           WRITE(6,921) ABPV
1           ELSE
1           WRITE(6,920) ABPV
1           ENDIF
1           CLOSE(6)
1           IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
1     610   CONTINUE
      C
      C     COMPUTE CONVERSION FACTOR **CPMAB** PPM/AB TO FIT ANALYZED DATA
      C     ABPV EQUALS ABSORBANCE PER VOLT AND COVLQ IS LIQUID CONVERSION
      C     FACTOR IN MG PER CUBIC METER
      C
            X = ACVTM * ABPV * COVLQ * 1E-6
      C
      C     AIRSP EQUALS WINDSPEED FOR TEST RUN IN MPH FOR 10.25 INCHES
      C     (TUNNEL WIDTH) AND 3.75 INCHES (TUNNEL HEIGHT)
      C
       654  CONTINUE
      C
            IF (AIRSP .LT. 5.0) GO TO 655
            DARTN = 10.25 * 3.75
            WDTUN = AIRSP
            GO TO 660
       655  DARTN = 10.25 * 3.75
            WDTUN = AIRSP
       660  Y = AIRSP * DARTN * .02832 * 88/144
      C
            IF ((NSET .EQ. 6) .OR. (ENDVT .EQ. 1.0)) GO TO 4C5
      C
            Z = X * Y
      C
            CPMAB = (TRAYM * (100. - PERCP)/100.)/Z
            CCVR1 = ABPV * CPMAB * TVCF3
      C
      C     COMPUTE VAPOR CONCENTRATION PRODUCED BY DEPOSITED DROPLETS
      C     ON ONE SUBSTRATE
      C
      C     CONVERSION USING CALCULATED PPM/AB FROM MASS BALANCE OF
      C     WINDTUNNEL DATA
      C     //////////// TABLE 2 ///////////
      C
            NTBL=2
            DO 676 IT=1,NSLT
1           IF(IT .EQ. 1) THEN
1           OPEN(6,FILE='CON')
1           ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
1           OPEN(6,FILE='TABLE.2',STATUS='NEW')
1           ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
1           GOTO 676
1           ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
1           OPEN(6,FILE='PRN')
1           ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
1           GOTO 676
1           ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
1           OPEN(6,FILE='PRN')
```


APPENDIX A

```
D Line# 1      7                                   Microsoft FORTRAN77 V3.31 August 1985
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,804) NTBL
1              ELSE
1              WRITE(6,805)
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,30) LL1
1              WRITE(6,30) LL2
1              WRITE(6,30) LL3
1              WRITE(6,30) LL4
1              ELSE
1              WRITE(6,810) LL1
1              WRITE(6,810) LL2
1              WRITE(6,810) LL3
1              WRITE(6,811) LL4
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,944)
1              WRITE(6,951)
1              WRITE(6,971)
1              WRITE(6,981)
1              WRITE(6,991)
1              WRITE(6,1001)
1              ELSE
1              WRITE(6,945)
1              WRITE(6,950)
1              WRITE(6,970)
1              WRITE(6,980)
1              WRITE(6,990)
1              WRITE(6,1000)
1              ENDIF
1              DO 675 I = 1,NOPTS
2        C
2        C     CONCENTRATION IN PPM
2        C
2              VPPMT(I) = VOLT(I) * CCVR1
2        C
2        C     CONCENTRATION IN MICROGRAM/CUBIC METER OR NANOGRAMS PER CC
2        C
2              VCDT(I) = VPPMT(I) * COVLQ
2        C
2        C     MICRIGRAMS PER CUBIC METER PER METERED SQUARED
2        C
2              VCPMS = VCDT(I)/.3387
2        C
2        C     MICROGRAMS PER CUBIC METER PER GRAM/METER SQUARED
2        C
2              VCPGM = VCDT(I)/VGPT
2        C
2        C     VAPOR CONCENTRATION PRODUCED BY SINGLE DROPLET EVAPORATING
2        C     FROM THE SUBSTRATE (PPM)
2        C
2              VPPMD(I) = VPPMT(I)/DFPT
2        C
2        C     VAPOR CONCENTRATION PRODUCED BY SINGLE DROPLET EVAPORATING
```

```
D Line# 1      7                          Microsoft FORTRAN77 V3.31 August 1985
2        C     FROM THE SUBSTRATE (MICROGRAMS PER CUBIC METER)
2        C
2              VCDD(I) = VCDT(I)/DPPT
2              TIM = ((TMINV * I) - TMINV)
2              A = VPPMT(I)
2              B = VCDT(I)
2              C = VPPMD(I)
2              D = VCDD(I)
2              IF(IT .EQ. 1) THEN
2              WRITE(6,1041) TIM,A,B,VCPMS,VCPGM,C,D
2              ELSE
2              WRITE(6,1040) TIM,A,B,VCPMS,VCPGM,C,D
2              ENDIF
2          675 CONTINUE
1              IF(IT .EQ. 1) THEN
1              WRITE(6,1889)
1              ELSE
1              WRITE(6,1888)
1              ENDIF
1              CLOSE(6)
1              IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
1          676 CONTINUE
         C
         C     VAPOR CONCENTRATION PRODUCED BY DEPOSITED DROPS ON SUBSTRATE
         C     USES THE MIRAN CALIBRATION FACTOR FOR CONVERSION TO PPM/AB
         C     //////////// TABLE 3 ////////////
         C
               NTBL=3
               DO 691 IT=1,NSLT
1              IF(IT .EQ. 1) THEN
1              OPEN(6,FILE='CON')
1              ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
1              OPEN(6,FILE='TABLE.3',STATUS='NEW')
1              ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
1              GOTO 69
1              ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
1              OPEN(6,FILE='PRN')
1              ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
1              GOTO 69
1              ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
1              OPEN(6,FILE='PRN')
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,804) NTBL
1              ELSE
1              WRITE(6,805)
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,30) LL1
1              WRITE(6,30) LL2
1              WRITE(6,30) LL3
1              WRITE(6,30) LL4
1              ELSE
1              WRITE(6,810) LL1
1              WRITE(6,810) LL2
1              WRITE(6,810) LL3
```

```
1           WRITE(6,811) LL4
1           ENDIF
1           IF(IT .EQ.1) THEN
1           WRITE(6,944)
1           WRITE(6,956)
1           WRITE(6,971)
1           WRITE(6,981)
1           WRITE(6,991)
1           WRITE(6,1001)
1           ELSE
1     680   WRITE(6,945)
1           WRITE(6,955)
1           WRITE(6,970)
1           WRITE(6,980)
1           WRITE(6,990)
1           WRITE(6,1000)
1           ENDIF
1           DO 690 I = 1,NOPTS
2     C
2     C     ANSWER (PPM)
2     C
2           CPMT(I) = VOLT(I) * ABPV * PRPAB * TVCF3
2     C
2     C     ANSWER (MICROGRAMS PER CUBIC METER OR NANOGRAMS PER CC)
2     C
2           CCDT(I) = CPMT(I) * COVLQ
2     C
2     C     (MICROGRAMS PER CUBIC METER PER METER SQUARED)
2     C
2           VCPMS = CCDT(I)/.3387
2     C
2     C     (MICROGRAMS PER CUBIC METER PER GRAM METER SQUARED)
2     C
2           VCPGM = CCDT(I)/VGPT
2     C
2     C     VAPOR CONCENTRATION PRODUCED BY SINGLE DROPLET EVAPORATING
2     C     FROM THE SUBSTRATE (PPM)
2     C
2           CPMD(I) = CPMT(I)/DPPT
2     C
2     C     ANSWER (MICROGRAMS PER CUBIC METER)
2     C
2           CCDD(I) = CCDT(I)/DPPT
2           TIM = ((TMINV * I) - TMINV)
2           A = CPMT(I)
2           B = CCDT(I)
2           C = CPMD(I)
2           D = CCDD(I)
2           IF(IT .EQ. 1) THEN
2           WRITE(6,1041) TIM,A,B,VCPMS,VCPGM,C,D,
2           ELSE
2           WRITE(6,1040) TIM,A,B,VCPMS,VCPGM,C,D,
2           ENDIF
2     690   CONTINUE
1           IF(IT .EQ. 1) THEN
1           WRITE(6,1889)
```

```
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1              ELSE
1              WRITE(6,1888)
1              ENDIF
1              CLOSE(6)
1              IF((IT .EQ. 1) .AND. (DISPLAY .EQ.1)) PAUSE
1        691   CONTINUE
         C
         C     COMPUTE CUMULATIVE MASS DISTRIBUTION
         C     ////////// TABLE 4 //////////
         C
               NTBL=4
               DO 756 IT=1,NSLT
1              IF(IT .EQ. 1) THEN
1              OPEN(6,FILE='CON')
1              ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
1              OPEN(6,FILE='TABLE.4',STATUS='NEW')
1              ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
1              GOTO 756
1              ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
1              OPEN(6,FILE='PRN')
1              ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
1              GOTO 756
1              ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
1              OPEN(6,FILE='PRN')
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,804) NTBL
1              ELSE
1              WRITE(6,805)
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,30) LL1
1              WRITE(6,30) LL2
1              WRITE(6,30) LL3
1              WRITE(6,30) LL4
1              ELSE
1              WRITE(6,810) LL1
1              WRITE(6,810) LL2
1              WRITE(6,810) LL3
1              WRITE(6,811) LL4
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,947)
1              WRITE(6,951)
1              WRITE(6,976)
1              WRITE(6,1051)
1              ELSE
1              WRITE(6,946)
1              WRITE(6,950)
1              WRITE(6,975)
1              WRITE(6,1050)
1              ENDIF
1        C
1              CUMDT(1) = 0.0
1              CSQMT(1) = 0.0
1              CGSQM(1) = 0.0
```

```
      CUMDD(1) = 0.0
C
      DO 750 I = 1,NOPTS
C
C     CALCULATE DOSAGE USING PPM/AB FROM MASS BALANCE FOR A
C     SINGLE SUBSTRATE (MILLIGRAM MINUTES PER CUBIC METER)
C
      DOSGT = (((VCDT(I) + VCDT(I-1))/2.0) * TMINV/1000.0)
      CUMDT(I) = CUMDT(I-1) + DOSGT
C
C     DOSAGE ANSWER PER SQUARE METER
C
      CSQMT(I) = CUMDT(I)/.3387
C
C     DOSAGE ANSWER PER GRAM PER SQUARE METER
C
      CGSQM(I) = CUMDT(I)/VGPT
C
C     DOSAGE ANSWER PER DROPLET
C
      DOSGD = (((VCDD(I) + VCDD(I-1))/2.0) * TMINV/1000.0)
      CUMDD(I) = CUMDD(I-1) + DOSGD
  750 CONTINUE
C
      DO 755 I = 1,NOPTS
      A = CUMDT(I)
      B = CSQMT(I)
      C = CGSQM(I)
      D = CUMDD(I)
      TIM = TMEAC(I)
      IF(IT .EQ. 1) THEN
      WRITE(6,1061) TIM,A,B,C,D
      ELSE
      WRITE(6,1060) TIM,A,B,C,D
      ENDIF
  755 CONTINUE
      TIMT = TMEAC(NOPTS)
      CLOSE(6)
      IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
  756 CONTINUE
C
C     PRINOUT CUMULATIVE DISTRIBUTION BASED ON PPM/AB CONVERSION FACTOR
C     OBTAINED FROM CALIBRATION OF MIRAN ANALYZER
C     ////////// TABLE 5 //////////
C
      NTBL=5
      DO 771 IT=1,NSLT
      IF(IT .EQ. 1) THEN
      OPEN(6,FILE='CON')
      ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
      OPEN(6,FILE='TABLE.5',STATUS='NEW')
      ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
      GOTO 771
      ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
      OPEN(6,FILE='PRN')
      ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
```

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1              GOTO 771
1              ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
1              OPEN(6,FILE='PRN')
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,804) NTSL
1              ELSE
1              WRITE(6,805)
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,30) LL1
1              WRITE(6,30) LL2
1              WRITE(6,30) LL3
1              WRITE(6,30) LL4
1              ELSE
1              WRITE(6,810) LL1
1              WRITE(6,810) LL2
1              WRITE(6,810) LL3
1              WRITE(6,811) LL4
1              ENDIF
1              IF(IT .EQ. 1) THEN
1              WRITE(6,947)
1              WRITE(6,956)
1              WRITE(6,976)
1              WRITE(6,1051)
1              ELSE
1              WRITE(6,946)
1              WRITE(6,955)
1              WRITE(6,975)
1              WRITE(6,1050)
1              ENDIF
1        C
1              CCUMT(1) = 0.0
1              XSQMT(1) = 0.0
1              XGSQM(1) = 0.0
1              CCUMD(1) = 0.0
1        C
1              DO 770 I = 2,NOPTS
2        C
2        C     CALCULATE DOASAGE USING PPM/AB FROM CALIBRATION OF MIRAN ANALYZER
2        C     (MILLIGRAM MINUTES PER CUBIC METER)
2        C
2              DOSXT = ((CCDT(I) + CCDT(I-1))/2.0) * TMINV/1000.0
2              CCUMT(I) = CCUMT(I-1) + DOSXT
2        C
2        C     DOSAGE ANSWER PER SQUARE METER OF CONTAMINATION
2        C
2              XSQMT(I) = CCUMT(I)/.3387
2        C
2        C     DOSAGE ANSWER PER GRAM PER SQUARE METER OF CONTAMINATION
2        C
2              XGSQM(I) = CCUMT(I)/VGPT
2        C
2        C     DOSAGE ANSWER PER DROPLET
2        C
2              DOSXD = (((CCDD(I) + CCDD(I-1))/2.0) * TMINV/1000.0)
```

```
2            CCUMD(I) = CCUMD(I-1) + DOSXD
2      770   CONTINUE
1      C
1            DO 775 I = 1,NOPTS
2            A = CCUMT(I)
2            B = XSQMT(I)
2            C = XGSQM(I)
2            D = CCUMD(I)
2            TIM = TMEAC(I)
2            IF(IT .EQ. 1) THEN
2            WRITE(6,1061) TIM,A,B,C,D
2            ELSE
2            WRITE(6,1060) TIM,A,B,C,D
2            ENDIF
2      775   CONTINUE
1            CLOSE(6)
1            IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
1      771   CONTINUE
       C
       C     CALCULATE AND PRINTOUT DROPLET EVAPORATION HISTORY
       C     CONVERT MASS OF DROPLET IN GRAMS TO MILLIGRAMS
       C     /////////// TABLE 6 ///////////
       C
             NTBL=6
             XMASD = CMASS * 1000.0
             DO 772 IT=1,NSLT
1            IF(IT .EQ. 1) THEN
1            OPEN(6,FILE='CON')
1            ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
1            OPEN(6,FILE='TABLE.6',STATUS='NEW')
1            ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
1            GOTO 772
1            ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
1            OPEN(6,FILE='PRN')
1            ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
1            GOTO 772
1            ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
1            OPEN(6,FILE='PRN')
1            ENDIF
1            IF(IT .EQ. 1) THEN
1            WRITE(6,804) NTBL
1            ELSE
1            WRITE(6,805)
1            ENDIF
1            IF(IT .EQ. 1) THEN
1            WRITE(6,30) LL1
1            WRITE(6,30) LL2
1            WRITE(6,30) LL3
1            WRITE(6,30) LL4
1            ELSE
1            WRITE(6,810) LL1
1            WRITE(6,810) LL2
1            WRITE(6,810) LL3
1            WRITE(6,811) LL4
1            ENDIF
1            IF(IT .EQ. 1) THEN
```

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1              WRITE(6,1111)
1              WRITE(6,1121)
1              WRITE(6,1141)
1              WRITE(6,1151)
1              ELSE
1              WRITE(6,1110)
1              WRITE(6,1120)
1              WRITE(6,1140)
1              WRITE(6,1150)
1              ENDIF
1              DO 785 I = 1,NOPTS
2        C
2              TIM = TMEAC(I)
2              AX = EVAPN(I)
2              ACDMG = (EVAPM(1) - EVAPM(I)) * 1000.0
2              ACDMF = EVAPN(1) - EVAPN(I)
2              BX = EVAPM(I) * 1000.0
2              CX = EVPM5(I) * 1000.0
2              DY = EVPN5(I)
2              FRT = TMEAC(I)/TIMT
2              FRHT(I) = TMEAC(I)/HAFTM
2              FHL = FRHT(I)
2        C
2              IF((VOLTN(NOPTS) .GE. .5) .AND. (IT .EQ. 1)) THEN
2              WRITE(6,1169) TIM,BX,AX,ACDMG,ACDMF,CX,DY,FRT,FHL
2              ELSEIF((VOLTN(NOPTS) .GE. .5) .AND. (IT .NE. 1 )) THEN
2              WRITE(6,1170) TIM,BX,AX,ACDMG,ACDMF,CX,DY,FRT,FHL
2              ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .EQ. 1)) THEN
2              WRITE(6,1172) TIM,BX,AX,ACDMG,ACDMF,CX,DY,FRT,DASH
2              ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .NE. 1)) THEN
2              WRITE(6,1171) TIM,BX,AX,ACDMG,ACDMF,CX,DY,FRT,DASH
2              ENDIF
2         785  CONTINUE
1              CLOSE(6)
1              IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
1         772  CONTINUE
         C
         C     PRINTOUT EVAPORATION HISTORY OF DEPOSITED DROPLET
         C     ////////// TABLE 7 /////////
         C
               NTBL=7
               DO 778 IT=1,NSLT
1              IF(IT .EQ. 1) THEN
1              OPEN(6,FILE='CON')
1              ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
1              OPEN(6,FILE='TABLE.7',STATUS='NEW')
1              ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
1              GOTO 778
1              ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
1              OPEN(6,FILE='PRN')
1              ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
1              GOTO 778
1              ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
1              OPEN(6,FILE='PRN')
1              ENDIF
1              IF(IT .EQ. 1) THEN
```

```
1            WRITE(6,804) NTBL
1            ELSE
1            WRITE(6,805)
1            ENDIF
1            IF(IT .EQ. 1) THEN
1            WRITE(6,30) LL1
1            WRITE(6,30) LL2
1            WRITE(6,30) LL3
1            WRITE(6,30) LL4
1            ELSE
1            WRITE(6,810) LL1
1            WRITE(6,810) LL2
1            WRITE(6,810) LL3
1            WRITE(6,811) LL4
1            ENDIF
1            IF(IT .EQ.1) THEN
1            WRITE(6,1114)
1            WRITE(6,1126)
1            WRITE(6,1117)
1            ELSE
1            WRITE(6,1115)
1            WRITE(6,1125)
1            WRITE(6,1116)
1            ENDIF
1            DO 777 I = 1,NOPTS
2      C
2            TIM = TMEAC(I)
2            AX = EVAPN(I)
2            BX = EVAPM(I) * 1000.0
2            ACDMG = (EVAPM(1) - EVAPM(I)) * 1000.0
2            ACDMF = EVAPN(1) - EVAPN(I)
2            ACDMN = ACDMF/(1 - EVAPN(NOPTS))
2            FRT = TMEAC(I)/TIMT
2            FRHT(I) = TMEAC(I)/HAFTM
2            FHL = FRHT(I)
2      C
2            IF((VOLTN(NOPTS) .GE. .5) .AND.(IT .EQ. 1)) THEN
2            WRITE(6,1174) TIM,FRT,FHL,BX,AX,ACDMG,ACDMF,ACDMN
2            ELSEIF((VOLTN(NOPTS) .GE. .5) .AND. (IT .NE. 1)) THEN
2            WRITE(6,1175) TIM,FRT,FHL,BX,AX,ACDMG,ACDMF,ACDMN
2            ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .EQ. 1)) THEN
2            WRITE(6,1177) TIM,FRT,DASH,BX,AX,ACDMG,ACDMF,ACDMN
2            ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .NE. 1)) THEN
2            WRITE(6,1176) TIM,FRT,DASH,BX,AX,ACDMG,ACDMF,ACDMN
2            ENDIF
2        777 CONTINUE
1            IF(IT .EQ.1) THEN
1            WRITE(6,1213)
1            ELSE
1            WRITE(6,1212)
1            ENDIF
1            CLOSE(6)
1            IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
1        778 CONTINUE
       C
       C
```

```
C      PRINTOUT DROPLET MASS INFORMATION FROM TRAY MASS LOADING
C      AND NUMBER OF DROPLETS ON EACH SUBSTRATE
C      /////////// TABLE 8 ///////////
C
       NTBL=8
       DPPO = 0.0000
       DO 788 IT=1,NSLT
       IF(IT .EQ. 1) THEN
       OPEN(6,FILE='CON')
       ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
       OPEN(6,FILE='TABLE.8',STATUS='NEW')
       ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
       GOTO 788
       ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
       OPEN(6,FILE='PRN')
       ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
       GOTO 788
       ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
       OPEN(6,FILE='PRN')
       ENDIF
       IF(IT .EQ. 1) THEN
       WRITE(6,804) NTBL
       ELSE
       WRITE(6,805)
       ENDIF
       IF(IT .EQ. 1) THEN
       WRITE(6,30) LL1
       WRITE(6.30) LL2
       WRITE(6,30) LL3
       WRITE(6,30) LL4
       ELSE
       WRITE(6,810) LL1
       WRITE(6,810) LL2
       WRITE(6,810) LL3
       WRITE(6,811) LL4
       ENDIF
       IF(IT .EQ. 1) THEN
       WRITE(6,821)
       WRITE(6,831)
       WRITE(6,841) GM1TP,GM2TP,GM3TP
       ELSE
       WRITE(6,820)
       WRITE(6,830)
       WRITE(6,840) GM1TP,GM2TP,GM3TP
       ENDIF
C
       IF (NCODE .GE. 6) GOTO 786
C
       IF(IT .EQ. 1) THEN
       WRITE(6,851) DPPO,DPPT,DPPT
       ELSE
       WRITE(6,850) DPPO,DPPT,DPPT
       ENDIF
C
       IF (NCODE .LT. 6) GOTO 787
C
```

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D Line# 1     7
1         786 CONTINUE
1             DPP3 = DPPT/2.0
1             DPP2 = DPP3
1             IF(IT .EQ. 1) THEN
1             WRITE(6,851) DPPO,DPP2,DPP3
1             ELSE
1             WRITE(6,850) DPPO,DPP2,DPP3
1             ENDIF
1       C
1         787 CONTINUE
1             IF(IT .EQ. 1) THEN
1             WRITE(6,861) GPM21,GPM22,GPM23
1             WRITE(6,871) TM1,TM2,TM3
1             WRITE(6,881) ETDPM
1             WRITE(6,891) SDMAS
1             WRITE(6,901) SEMAS
1             WRITE(6,911) EQDPD
1             ELSE
1             WRITE(6,860) GPM21,GPM22,GPM23
1             WRITE(6,870) TM1,TM2,TM3
1             WRITE(6,880) ETDPM
1             WRITE(6,890) SDMAS
1             WRITE(6,900) SEMAS
1             WRITE(6,910) EQDPD
1             ENDIF
1       C
1       C     CALCUALTE MASS SAMPLED BY MIRAN ON SUBSTRATE BASIS
1       C
1             SMAS = CUMDT(NOPTS) * 7.5E-5
1             XSMAS = CCUMT(NOPTS) * 7.5E-5
1       C
1       C     COMPARE WITH SUBSTRATE MASS ANS EXPRESS AS PERCENT
1       C
1             RMAS = (SMAS/(CMASS * DPPT)) * 100.0
1             XRMAS = (XSMAS/(CMASS * DPPT)) * 100.0
1       C
1       C     CALCULATE THE DIFFERENCE BETWEEN MIRAN SAMPLED MASS FOR
1       C     CALCUALTED AND CALIBRATED PPM/AB CONVERSION FACTOR
1       C
1             DIFMS = SMAS - XSMAS
1             IF(IT .EQ. 1) THEN
1             WRITE(6,1101) DIFMS
1             WRITE(6,1081) CPMAB
1             WRITE(6,1091) PRPAB
1             WRITE(6,1071)
1             WRITE(6,1073) RMAS
1             WRITE(6,1075) XRMAS
1             ELSE
1             WRITE(6,1100) DIFMS
1             WRITE(6,1080) CPMAB
1             WRITE(6,1090) PRPAB
1             WRITE(6,1070)
1             WRITE(6,1072) RMAS
1             WRITE(6,1074) XRMAS
1             ENDIF
1             CLOSE(6)
```

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1                IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
1          788   CONTINUE
             C
             C   FORMAT STATMENTS FOR INPUT DATA
             C
             C
             C
             C   CALCULATE EVAPORATION RATE FOR SINGLE DROPLET
             C
                 N = NOPTS - 1
             C
             C   ANSWER MICROGRAMS PER MINUTE
             C
                 EVPRM(1) = (EVAPM(1) - CMASS)/TMINV
             C
             C   ANSWER FRACTIONAL AMOUNT PER MINUTE
             C
                 EVPRN(1) = EVPRM(1) * CMASS/EVAPM(1)
                 TIMER(1) = TMEAC(1)
                 FRTM(1) = TIMER(1)/TIMT
             C
                 DO 790 I = 2,NOPTS
1            C
1            C   ANSWER MICROGRAMS PER MINUTE
1            C
1                EVPRM(I) = (EVAPM(I) - EVAPM(I-1))/TMINV
1            C
1            C   ANSWER FRACTIONAL AMOUNT PER MINUTE
1            C
1                EVPRN(I) = EVPRM(I) * CMASS/EVAPM(I)
1            C
1                TIMER(I) = TMEAC(I)
1                FRTM(I) = TIMER(I)/TIMT
1          790   CONTINUE
             C
             C   EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY
             C   //////////// TABLE 9 ///////////
             C
                 NTBL=9
                 DO 796 IT=1,NSLT
1                IF(IT .EQ. 1) THEN
1                OPEN(6,FILE='CON')
1                ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. [illegible] .OR. (NSLT .EQ. 3))) THEN
1                OPEN(6,FILE='TABLE.9',STATUS='NEW')
1                ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
1                GOTO 796
1                ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
1                OPEN(6,FILE='PRN')
1                ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
1                GOTO 796
1                ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
1                OPEN(6,FILE='PRN')
1                ENDIF
1                IF(IT .EQ. 1) THEN
1                WRITE(6,804) NTBL
1                ELSE
```

```
1         WRITE(6,805)
1         ENDIF
1         IF(IT .EQ. 1) THEN
1         WRITE(6,30) LL1
1         WRITE(6,30) LL2
1         WRITE(6,30) LL3
1         WRITE(6,30) LL4
1         ELSE
1         WRITE(6,810) LL1
1         WRITE(6,810) LL2
1         WRITE(6,810) LL3
1         WRITE(6,811) LL4
1         ENDIF
1         IF(IT .EQ. 1) THEN
1         WRITE(6,1181)
1         WRITE(6,1191)
1         WRITE(6,1201)
1         ELSE
1         WRITE(6,1180)
1         WRITE(6,1190)
1         WRITE(6,1200)
1         ENDIF
1   C
1         SUMEV = 0.0
1   C
1         DO 795 I = 1,NOPTS
2         TIM = TIMER(I)
2         FRT = FRTM(I)
2         FHL = FRHT(I)
2         XX = EVPRN(I) * 1E6
2         YY = EVPRM(I) * 1E6
2         SUMEV = SUMEV + YY
2   C
2         IF((VOLTN(NOPTS) .GE. .5) .AND. (IT .EQ. 1)) THEN
2         WRITE(6,1209) TIM,FRT,FHL,YY,XX
2         ELSEIF((VOLTN(NOPTS) .GE. .5) .AND. (IT .NE. 1 )) THEN
2         WRITE(6,1210) TIM,FRT,FHL,YY,XX
2         ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .EQ. 1)) THEN
2         WRITE(6,1214) TIM,FRT,DASH,YY,XX
2         ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .NE. 1)) THEN
2         WRITE(6,1211) TIM,FRT,DASH,YY,XX
2         ENDIF
2   C
1     795 CONTINUE
1         IF(IT .EQ. 1) THEN
1         WRITE(6,1213)
1         ELSE
1         WRITE(6,1212)
1         ENDIF
1         CLOSE(6)
1   C
1   C     EVAPORATION RATE AVERGED OVER DURATION OF TEST, MICROGRAMS/MIN
1   C
1         ERTMX =SUMEV/NOPTS
1   C
1         IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
```

```
1       796  CONTINUE
        C
        C
        C    CHECK OF INPUT AND OUTPUT PARAMETER VALUES
        C    ///////// TABLE 10 /////////
        C
             NTBL=10
             DO 792 IT=1,NSLT
1            IF(IT .EQ. 1) THEN
1            OPEN(6,FILE='CON')
1            ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
1            OPEN(6,FILE='TABLE.10',STATUS='NEW')
1            ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
1            GOTO 792
1            ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
1            OPEN(6,FILE='PRN')
1            ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
1            GOTO 792
1            ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
1            OPEN(6,FILE='PRN')
1            ENDIF
1            IF(IT .EQ. 1) THEN
1            WRITE(6,804) NTBL
1            ELSE
1            WRITE(6,805)
1            ENDIF
1            IF(IT .EQ. 1) THEN
1            WRITE(6,30) LL1
1            WRITE(6,30) LL2
1            WRITE(6,30) LL3
1            WRITE(6,30) LL4
1            ELSE
1            WRITE(6,810) LL1
1            WRITE(6,810) LL2
1            WRITE(6,810) LL3
1            WRITE(6,811) LL4
1            ENDIF
1            IF(IT .EQ. 1) THEN
1            WRITE(6,1218)
1            WRITE(6,1202) PRPAB
1            WRITE(6,1204) COVLQ
1            WRITE(6,1206) PERCP
1            WRITE(6,1216) Z
1            WRITE(6,1221) X
1            WRITE(6,1231) Y
1            WRITE(6,1237) DARTN
1            WRITE(6,1241) TRAYM
1            WRITE(6,1243) NCODE
1            WRITE(6,124[illegible]) CODEL
1            WRITE(6,124[illegible]) TMASS
1            WRITE(6,124[illegible]) CMASS
1            WRITE(6,12[illegible]) CK
1            WRITE(6,12[illegible]) CPMAB
1            WRITE(6,12[illegible]) [illegible]
1            WRITE(6,12[illegible]) CCV[illegible]
1            WRITE(6,12[illegible]) ACV[illegible]
```


APPENDIX A

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```
      ELSE
      WRITE(6,1217)
      WRITE(6,1207) PRPAB
      WRITE(6,1203) COVLQ
      WRITE(6,1205) PERCP
      WRITE(6,1215) Z
      WRITE(6,1220) X
      WRITE(6,1230) Y
      WRITE(6,1236) DARTN
      WRITE(6,1240) TRAYM
      WRITE(6,1242) NCODE
      WRITE(6,1244) CODEL
      WRITE(6,1246) TMASS
      WRITE(6,1248) CMASS
      WRITE(6,1292) CK
      WRITE(6,1250) CPMAB
      WRITE(6,1260) TVCF3
      WRITE(6,1270) CCVR1
      WRITE(6,1280) ACVTM
      ENDIF
C
      IF((VOLTN(NOPTS) .GE. .5) .AND. (IT .EQ. 1)) THEN
      WRITE(6,1289) HAFTM
      ELSEIF((VOLTN(NOPTS) .GE. .5) .AND. (IT .NE. 1)) THEN
      WRITE(6,1290) HAFTM
      ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .EQ. 1)) THEN
      WRITE(6,1288) DASH
      ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .NE. 1)) THEN
      WRITE(6,1291) DASH
      ENDIF
C
      IF(IT .EQ. 1) THEN
      WRITE(6,1301) T2
      WRITE(6,1311) T1
      WRITE(6,1321) V2
      WRITE(6,1329) V1
      ELSE
      WRITE(6,1300) T2
      WRITE(6,1310) T1
      WRITE(6,1320) V2
      WRITE(6,1330) V1
      ENDIF
C
      IF((VOLTN(NOPTS) .GE. .5) .AND. (IT .EQ. 1)) THEN
      WRITE(6,1328) ERHLF
      WRITE(6,1327) ERTMX
      ELSEIF((VOLTN(NOPTS) .GE. .5) .AND. (IT .NE. 1)) THEN
      WRITE(6,1331) ERHLF
      WRITE(6,1332) ERTMX
      ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .EQ. 1)) THEN
      WRITE(6,1326) DASH
      WRITE(6,1336) DASH
      ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .NE. 1)) THEN
      WRITE(6,1333) DASH
      WRITE(6,1335) DASH
      ENDIF
```

```
C
C      IF((VOLTN(NOPTS) .GE. .5) .AND. (IT .EQ. 1)) THEN
C      WRITE(6,1327) ERTMX
C      ELSEIF((VOLTN(NOPTS) .GE .5) .AND. (IT .NE. 1)) THEN
C      WRITE(6,1332) ERTMX
C      ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .EQ. 1)) THEN
C      WRITE(6,1336) DASH
C      ELSEIF((VOLTN(NOPTS) .LT. .5) .AND. (IT .NE. 1)) THEN
C      WRITE(6,1335) DASH
C      ENDIF
C
      IF(IT .EQ. 1) THEN
      WRITE(6,1325) ENDV
      ELSE
      WRITE(6,1334) ENDV
      ENDIF
      CLOSE(6)
      IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
  792 CONTINUE
C
C     CALCULATE THE EFFECTIVE WINDSPEEDS TO ACHIEVE PPM/AB CALIBRATION
C     VALUE PRPAB FROM TEST DATA
C
      IF (WDTUN .LT. 5.0) GO TO 798
C     FOR HIGH WIND SPEED TESTS
      AREAH = 10.5 * 4.0
      AREAL = 10.0 * 3.5
      GO TO 799
C     FOR LOW WIND SPEED TESTS
  798 AREAH = 10.5 * 4.0
      AREAL = 10.0 * 3.5
  799 ARCR1 = DARTN/AREAH
      ARCR2 = DARTN/AREAL
C
C     ASSUME DYNAMIC CROSS-SECTIONAL AREA OF 10.25 BY 3.75 SQ INCHES
C     WINDSPEED IN MPH
C
      WMPH1 = (CPMAB/PRPAB) * AIRSP
C
C     EQUIVALENT WINDSPEED IN FPM
C
      WFPM1 = WMPH1 * 88.0 + .5
C
C     ASSUME DYNAMIC CROSS-SECTIONAL AREA OF 10.5 BY 4.0 SQ INCHES
C     WINDSPEED IN MPH
C
      WMPH2 = WMPH1 * ARCR1
C
C     EQUIVALENT WINDSPEED IN FPM
C
      WFPM2 = WMPH2 * 88.0 + .5
C
C     ASSUME DYNAMIC CROSS-SECTIONAL AREA OF 10.0 BY 3.5 SQUARE INCHES
C     WINDSPEED IN MPH
C
      WMPH3 = WMPH1 * ARCR2
```

```
C
C     EQUIVALENT WINDSPEED IN FPM
C
      WFPM3 = WMPH3 * 88.0 + .5
C
C
C     CALCULATE THE EFFECTIVE WINDSPEEDS TO ACHIEVE PPM/AB CALIBRATION
C     VALUE = PRPAB + 3 SIGMA
C     ASSUME DYNAMIC CROSS-SECTIONAL AREA OF 10.25 BY 3.75 SQ INCHES
C
      AHPRA = PRPAB + 7.5
C
C     WINDSPEED IN MPH
C
      SMPH1 = (WMPH1 * PRPAB)/AHPRA
C
C     EQUIVALENT WINDSPEED IN FPM
C
      SFPM1 = SMPH1 * 88.0 + .5
C
C     ASSUME DYNAMIC CROSS-SECTINAL AREA OF 10.5 BY 4.0
C     WINDSPEED IN MPH
C
      SMPH2 = SMPH1 * ARCR1
C
C     EQUIVALENT WINDSPEED IN FPM
C
      SFPM2 = SMPH2 * 88.0 + .5
C
C     ASSUME DYNAMIC CROSS-SECTIONAL AREA OF 10.0 BY 3.5 SQ INCHES
C     WINDSPEED IN MPH
C
      SMPH3 = SMPH1 * ARCR2
C
C     EQUIVALENT WINDSPEED IN FPM
C
      SFPM3 = SMPH3 * 88.0 + .5
C
C     CALCULATE THE EFFECTIVE WINDSPEEDS TO ACHIEVE PPM/AB CALIBRATION
C     VALUE = PRPAB -3 SIGMA
C
      ALPRA = PRPAB - 7.5
C
C     ASSUME DYNAMIC CROSS-SECTIONAL AREA OF 10.25 BY 3,75 SQ INCHES
C     WINDSPEED IN MPH
C
      AMPH1 = (WMPH1 * PRPAB)/ALPRA
C
C     EQUIVALENT WINDSPEED IN FPM
C
      AFPM1 = AMPH1 * 88.0 + .5
C
C     ASSUME DYNAMIC CROSS-SECTIONAL AREA OF 10.. BY 4.0 SQ INCHES
C     WINDSPEED IN MPH
C
      AMPH2 = AMPH1 * ARCR1
```

```
C
C      EQUIVALENT WINDSPEED IN FPM
C
       AFPM2 = AMPH2 * 88.0 + .5
C
C      ASSUME DYNAMIC CROSS-SECTIONAL AREA OF 10.0 BY 3.5 SQ INCHES
C      WINDSPEED IN MPH
C
       AMPH3 = AMPH1 * ARCR2
C
C      EQUIVALENT IN FPM
C
       AFPM3 = AMPH3 * 88.0 + .5
C
C      EFFECTIVE WINDSPEEDS FOR TEST TO ACHIEVE PPM/AB OF MIRAN
C      CALIBRATION FOR THE TEST DATA
C      /////////// TABLE 11 ///////////
C
       NTBL=11
       DO 793 IT=1,NSLT
       IF(IT .EQ. 1) THEN
       OPEN(6,FILE='CON')
       ELSEIF((IT .EQ. 2) .AND. ((NSLT .EQ. 2) .OR. (NSLT .EQ. 3))) THEN
       OPEN(6,FILE='TABLE.11',STATUS='NEW')
       ELSEIF((IT .EQ. 2) .AND. ((NSLT .NE. 2) .OR. (NSLT .NE. 3))) THEN
       GOTO 793
       ELSEIF((IT .EQ. 3) .AND. (NSLT .EQ. 3)) THEN
       OPEN(6,FILE='PRN')
       ELSEIF((IT .EQ. 3) .AND. (NSLT .NE. 3)) THEN
       GOTO 793
       ELSEIF((IT .EQ. 4) .AND. (NSLT .EQ. 4)) THEN
       OPEN(6,FILE='PRN')
       ENDIF
       IF(IT .EQ.1) THEN
       WRITE(6,804) NTBL
       ELSE
       WRITE(6,805)
       ENDIF
       IF(IT .EQ. 1) THEN
       WRITE(6,30) LL1
       WRITE(6,30) LL2
       WRITE(6,30) LL3
       WRITE(6,30) LL4
       ELSE
       WRITE(6,810) LL1
       WRITE(6,810) LL2
       WRITE(6,810) LL3
       WRITE(6,811) LL4
       ENDIF
       IF(IT .EQ. 1) THEN
       WRITE(6,1401)
       WRITE(6,1411)
       ELSE
       WRITE(6,1400)
       WRITE(6,1410)
       ENDIF
```

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```
C
      IF(WATUR .GT. 5.0) GO TO 7000
C
      IF(IT .EQ. 1) THEN
      WRITE(6,1421)
      ELSE
      WRITE(6,1420)
      ENDIF
      GO TO 7050
 7000 CONTINUE
      IF(IT .EQ. 1) THEN
      WRITE(6,1426)
      ELSE
      WRITE(6,1425)
      ENDIF
 7050 CONTINUE
      IF(IT .EQ. 1) THEN
      WRITE(6,1431)
      WRITE(6,1441) ALPRA,AMPH2,AFPM2,AMPH1,AFPM1,AMPH3,AFPM3
      WRITE(6,1441) PRPAB,WMPH2,WFPM2,WMPH1,WFPM1,WMPH3,WFPM3
      WRITE(6,1441) AHPRA,SMPH2,SFPM2,SMPH1,SFPM1,SMPH3,SFPM3
      ELSE
      WRITE(6,1430)
      WRITE(6,1440) ALPRA,AMPH2,AFPM2,AMPH1,AFPM1,AMPH3,AFPM3
      WRITE(6,1440) PRPAB,WMPH2,WFPM2,WMPH1,WFPM1,WMPH3,WFPM3
      WRITE(6,1440) AHPRA,SMPH2,SFPM2,SMPH1,SFPM1,SMPH3,SFPM3
      ENDIF
      WRITE(6,2000)
      CLOSE(6)
      IF((IT .EQ. 1) .AND. (DISPLAY .EQ. 1)) PAUSE
  793 CONTINUE
C
C

C
C     OPTION TO RUN THE PROGRAM AGAIN WITH ANOTHER DATA FILE
C
 1550 ANSWER=' '
      WRITE(*,1500)
      WRITE(*,1530)
      WRITE(*,1540)
      READ(*,30) ANSWER
      IF((ANSWER .NE. 'Y') .AND. (ANSWER .NE. 'y') .AND. (ANSWER .NE. 'N
     &') .AND. (ANSWER .NE. 'n')) GOTO 1550
      IF((ANSWER .EQ. 'Y') .OR. (ANSWER .EQ. 'y')) GOTO 1
      IF((ANSWER .EQ. 'N') .OR. (ANSWER .EQ. 'n')) GOTO 9999
C
C     FORMAT STATEMENTS FOR PROGRAM
C
   30 FORMAT(A)
   35 FORMAT(F7.2,F7.2,F7.2,F8.1,I5,F8.1,F7.2,F8.2)
   40 FORMAT(F7.3,F7.1,I5,F7.2)
   45 FORMAT(I4)
   51 FORMAT(1H0,'INDEX MILLIVOLT   VOLT        INDEX MILLIVOLT   VOLT
     &  INDEX MILLIVOLT   VOLT'/)
   52 FORMAT(1H ,I4,3X,I4,3X,F8.4,7X,I4,3X,I4,2X,F8.4,7X,I4,2X,I4,2X,F8.
```

```
     &4)
53   FORMAT(/1X,'THIS IS THE MIRAN VOLTAGE DATA IN THE SELECTED FILE')
55   FORMAT(1H ,'DO YOU WISH TO CONTINUE WITH THE ANALYSIS USING THIS D
     &ATA?')
57   FORMAT(1H0,'ANSWER Y FOR YES OR N FOR NO.....THEN PRESS ENTER')
804  FORMAT(1H1/,37X,'TABLE',I3/)
805  FORMAT(1H1//,61X,'TABLE'/)
810  FORMAT(28X,A)
811  FORMAT(28X,A/)
820  FORMAT(1H ,37X,'SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSIT
     &ION')
821  FORMAT(8X,'SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION')
830  FORMAT(//49X,'SUBSTRATE 1',8X,'SUBSTRATE 2',8X,'SUBSTRATE 3'//)
831  FORMAT(//29X,'SUBSTRATE 1',8X,'SUBSTRATE 2',8X,'SUBSTRATE 3'//)
840  FORMAT(1H ,25X,' CONTAMINATION, GRAMS',4X,F7.3,14X,F5.3,14X,F5.3,
841  FORMAT(1H ,' CONTAMINATION, GRAMS',4X,F14.6,5X,F14.6,5X,F14.6)
850  FORMAT(1H ,25X,' NUMBER OF DROPLETS',5X,F8.3,11X,F8.3,11X,F8.3)
851  FORMAT(1H ,' NUMBER OF DROPLETS',6X,F14.6,5X,F14.6,5X,F14.6)
860  FORMAT(1H ,25X,' GRAMS PER SQ METER',5X,F8.3,11X,F8.3,11X,F8.3)
861  FORMAT(1H ,' GRAMS PER SQ METER',6X,F14.6,5X,F14.6,5X,F14.6)
870  FORMAT(1H ,25X,' GRAMS PER DROPLET',10X,F6.5,13X,F6.5,13X,F6.5//)
871  FORMAT(1H ,' GRAMS PER DROPLET',7X,F14.6,5X,F14.6,5X,F14.6//)
880  FORMAT(1H ,25X,' ESTIMATED MEAN DROPLET MASS',12X,F8.5,' GRAMS')
881  FORMAT(1H ,' ESTIMATED MEAN DROPLET MASS',12X,F8.5,' GRAMS')
890  FORMAT(1H ,25X,' STANDARD DEVIATION OF TEST DROPLET MASS',F8.5,' G
     &RAMS')
891  FORMAT(1H ,' STANDARD DEVIATION OF TEST DROPLET MASS',F8.5,' GRAMS
     &')
900  FORMAT(1H ,25X,' STANDARD ERROR OF MEAN MASS ESTIMANT',3X,F8.5,' G
     &RAMS'/)
901  FORMAT(1H ,' STANDARD ERROR OF MEAN MASS ESTIMANT',3X,F8.5,' GRAMS
     &'/)
910  FORMAT(1H ,26X,'EQUIVALENT DROPLET DIAMETER',11X,F6.2,' MILLIMETER
     &S'//)
911  FORMAT(1H ,' EQUIVALENT DROPLET DIAMETER',12X,F6.2,' MILLIMETERS
     &'//)
918  FORMAT(1H ,40X,'OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER'/
     &)
919  FORMAT(1H0,16X,'OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER'/
     &)
920  FORMAT(/30X,'MIRAN VAPOR ANALYZER',F6.2,2X,'ABSORBANCE UNITS PER V
     &OLT')
921  FORMAT(6X,' MIRAN VAPOR ANALYZER',F6.2,2X,'ABSORBANCE UNITS PER VO
     &LT')
922  FORMAT(31X,'ANALYZER',4X,'OUTPUT',12X,'CUMULATIVE DISTRIBUTION FOR
     & TWO SUBSTRATES')
923  FORMAT(6X,' ANALYZER',5X,'OUTPUT',12X,'CUMULATIVE DISTRIBUTION   T
     &     SUBSTRATES')
9[illegible] FORMAT(1H ,32X,'TIME',4X,'ABSORBANCE',10X,'ELAPSED TIME',6X,'TOTAL
     &',8X,'TOTAL')
931  FORMAT(1H ,8X,' TIME',4X,'ABSORBANCE',10X,'ELAPSED TIME',4X,'TOTAL
     &',8X,'TOTAL')
[illegible]5 FORMAT(1H ,31X,'MINUTES',4X,'VOLTS',15X,'MINUTES',7X,'VOLT.MIN',5X
     &,'NORMALIZED'/)
936  FORMAT(1H ,7X,' MINUTES',4X,'VOLTS',15X,'MINUTES',5X,'VOLT.MIN',5X
     &,'NORMALIZED'/)
```

```
 940  FORMAT(29X,F8.1,5X,F6.4,15X,F7.1,8X,F6.3,6X,F8.6)
 941  FORMAT(6X,F8.1,3X,F8.4,13X,F7.1,8X,F6.3,6X,F8.6)
 944  FORMAT(1H0,6X,'VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSIT
     &ED DROPLETS')
 945  FORMAT(1H ,37X,'VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSI
     &TED DROPLETS')
 946  FORMAT(1H ,29X,'CUMULATIVE DOSAGE DERIVED FROM UNIFORM ARRAY OF DE
     &POSITED DROPLETS')
 947  FORMAT(1H0,2X,'CUMULATIVE DOSAGE DERIVED FROM UNIFORM ARRAY OF DEP
     &OSITED DROPLETS')
 950  FORMAT(1H ,49X,'(PPM/AB BASED ON MASS BALANCE)')
 951  FORMAT(1H0,17X,'(PPM/AB BASED ON MASS BALANCE)')
 955  FORMAT(1H ,47X,'(PPM/AB BASED ON MIRAN CALIBRATION DATA)')
 956  FORMAT(1H0,17X,'(PPM/AB BASED ON MIRAN CALIBRATION DATA)')
 970  FORMAT(27X,'ELAPSED',4X,'PPM',6X,'MICROGRAMS',8X,'*',13X,'*',10X,
     &'PPM',6X,'MICROGRAMS')
 971  FORMAT(1X,'ELAPSED',4X,'PPM',3X,'MICROGRAMS',6X,'*',12X,'*',8X,'PP
     &M',6X,'MICROGRAMS')
 975  FORMAT(1H ,28X,'TIME',3X,'*********** MILLIGRAM.MINUTES PER CUBIC
     & METER *****************')
 976  FORMAT(1H ,4X,'TIME',3X,'*********** MILLIGRAM.MINUTES PER CUBIC
     & METER *****************')
 980  FORMAT(28X,'TIME',18X,'PER',11X,'PER',11X,'PER',22X,'PER')
 981  FORMAT(2X,'TIME',15X,'PER',9X,'PER',10X,'PER',19X,'PER')
 990  FORMAT(49X,'CUBIC',9X,'METER',10X,'GRAM/',10X,'PER',4X,'CUBIC METE
     &R')
 991  FORMAT(20X,'CUBIC',7X,'METER',7X,'GRAM/',7X,'PER',5X,'CUBIC METER
     &')
1000  FORMAT(27X,'MINUTES',15X,'METER',8X,'SQUARED',6X,'METER SQD',5X,'
     &DROP',6X,'PER DROP'/)
1001  FORMAT(1X,'MINUTES',12X,'METER',6X,'SQUARED',4X,'METER SQD',3X,'
     &DROP',6X,'PER DROP'/)
1030  FORMAT(1H ,98X,'METER'//)
1040  FORMAT(27X,F6.1,3X,F8.3,3X,F10.3,5X,F10.3,3X,F10.3,4X,F8.5,4X,
     &F8.3)
1041  FORMAT(1X,F7.1,F7.3,F11.2,1X,F12.3,F10.3,3X,F10.6,F11.3)
1050  FORMAT(1H ,27X,'MINUTES',3X,'DOSAGE',4X,'PER SQUARE METER',2X,
     &'PER GRAM/SQ METER',6X,'PER DROPLET'/)
1051  FORMAT(1H ,3X,'MINUTES',3X,'DOSAGE',4X,'PER SQUARE METER',2X,
     &'PER GRAM/SQ METER',6X,'PER DROPLET'/)
1060  FORMAT(27X,F6.1,3X,F8.3,8X,F10.3,8X,F9.5,11X,F9.5)
1061  FORMAT(3X,F6.1,3X,F8.3,6X,F10.3,6X,F12.4,9X,F12.4)
1070  FORMAT(1H ,26X,'RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT
     & 75 LITER PER MINUTE TO TOTAL MASS'/)
1071  FORMAT(1H ,1X,'RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT
     &75 L/MIN TO TOTAL MASS'/)
1072  FORMAT(1H ,26X,'BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) ',
     &F10.5,2X,'PERCENT'/)
1073  FORMAT(1H ,1X,'BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) ',
     &F10.5,2X,'PERCENT'/)
1074  FORMAT(1H ,26X,'BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) ',
     &F10.5,2X,'PERCENT'/)
1075  FORMAT(1H ,1X,'BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) ',
     &F10.5,2X,'PERCENT'/)
1080  FORMAT(1H ,26X,'FOR CONVERSION FACTOR PPM/AB * CALCULATION * ',
     &F8.3/)
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1081 FORMAT(1H ,1X,'FOR CONVERSION FACTOR PPM/AB * CALCULATION * ',
    &F8.3/)
1090 FORMAT(1H ,26X,'FOR CONVERSION FACTOR PPM/AB * CALIBRATION * ',
    &F8.3/)
1091 FORMAT(1H ,1X,'FOR CONVERSION FACTOR PPM/AB * CALIBRATION * ',
    &F8.3/)
1100 FORMAT(1H ,26X,'DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES',F10.7,
    &2X,'GRAMS'/)
1101 FORMAT(1H ,1X,'DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES',F10.7,2X
    &,'GRAMS'/)
1110 FORMAT(1H ,32X,'EVAPORATION HISTORY OF TEST DROPLET MEASURED AND T
    &HEORETICAL'/)
1111 FORMAT(1H0,6X,'EVAPORATION HISTORY OF TEST DROP MEASURED AND THEOR
    &ETICAL')
1114 FORMAT(1H0,16X,'EVAPORATION HISTORY OF DEPOSITED TEST DROPLET')
1115 FORMAT(1H ,40X,'EVAPORATION HISTORY OF DEPOSITED TEST DROPLET')
1116 FORMAT(1H ,14X,'MINUTES',3X,'FRACTION',3X,'HALF-LIFES',5X,'MILLIGR
    &AMS',3X,'FRACTIONAL',5X,'MILLIGRAMS',3X,'FRACTIONAL'3X,
    &'NORMALIZED'/)
1117 FORMAT(1H ,1X,'MINUTES',4X,'FRACTION',2X,'HALF-LIFES',3X,'MG',5X
    &,'FRACTION',5X,'MG',3X,'FRACTION',2X,'NORMALIZED'/)
1120 FORMAT(1H0,25X,'EXPERIMENTAL EVAPORATION DATA',18X,'THEORETICAL',
    &1X,'HALF LIFE MODEL DATA')
1121 FORMAT(1H0,1X,'EXPERIMENTAL EVAPORATION DATA',15X,'THEORETICAL',
    &1X,'HALF LIFE MODEL DATA')
1125 FORMAT(1H ,14X,'*************** TIME **************',5X,
    &'***** RESIDUAL MASS *****',5X,'*********** CUMULATIVE MASS *********
    &')
1126 FORMAT(1H ,1X,'************ TIME **************',1X,'RESIDUAL MASS
    &***',5X,'CUMULATIVE MASS *********')
1140 FORMAT(1H ,9X,'TIME',9X,'RESIDUAL MASS',12X,'CUMULATIVE MASS',9X,
    &'MASS',9X,'MASS',8X,'TIME',8X,'TIME')
1141 FORMAT(1H ,3X,'TIME',2X,'RESIDUAL MASS',5X,'CUMULATIVE MASS',2X,
    &' RESIDUAL MASS',4X,'***** TIME *****')
1150 FORMAT(1H ,9X,'MINUTES',3X,'MILLIGRAMS',2X,'FRACTIONAL',2X,'MILLIG
    &RAMS',3X,'FRACTIONAL',3X,'MILLIGRAMS',3X,'FRACTIONAL',3X,'FRACTION
    &AL',3X,'HALF-LIFES'/)
1151 FORMAT(1H ,2X,'MIN',5X,'MG',5X,'FRACTION',3X,'MG',5X,'FRACTION',2X
    &,'MG',3X,'FRACTION',2X,'FRACTION',2X,'HALF-LIFES'/)
1169 FORMAT(1X,F7.1,2X,F6.3,3X,F6.3,2X,F6.3,1X,F6.3,4X,F7.3,2X,F6.3,2X,
    &F6.3,4X,F6.3)
1170 FORMAT(9X,F7.1,3X,F10.5,4X,F8.6,3X,F10.6,3X,F9.5,1X,F11.5,5X,
    &F8.6,4X,F6.4,5X,F9.5)
1171 FORMAT(9X,F7.1,3X,F10.5,4X,F8.6,3X,F10.6,3X,F9.5,1X,F11.5,5X,
    &F8.6,4X,F6.4,10X,A)
1172 FORMAT(1X,F7.1,2X,F6.3,3X,F6.3,2X,F6.3,1X,F6.3,4X,F7.3,2X,F6.3,2X,
    &F6.3,4X,A)
1174 FORMAT(1X,F7.1,4X,F6.3,4X,F6.3,7X,F6.3,2X,F6.3,5X,F6.3,3X,F6.3,3X,
    &F6.3)
1175 FORMAT(15X,F7.1,5X,F6.4,5X,F9.4,3X,F13.5,4X,F8.5,6X,F10.5,3X,F10.4
    &,3X,F10.4)
1176 FORMAT(15X,F7.1,5X,F6.4,10X,A6,6X,F13.5,4X,F8.5,6X,F10.5,3X,F10.4,
    &3X,F10.4)
1177 FORMAT(1X,F7.1,4X,F6.3,4X,A,12X,F6.3,2X,F6.3,5X,F6.3,3X,F6.3,3X,F6
    &.3)
1180 FORMAT(1H ,40X,'EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY
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     &'/)
1181 FORMAT(1H0,16X,'EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY
     &')
1190 FORMAT(1H ,25X,'************* TIME **************',12X,'   ***** EVA
     &PORATION RATE *****')
1191 FORMAT(1H0,1X,'************* TIME *************',9X,'   ***** EVAPO
     &RATION RATE *****')
1200 FORMAT(26X,'MINUTES',3X,'FRACTIONAL',3X,'HALF-LIFES',5X,'MICROGRAM
     &S PER MINUTE',6X,'NORMALIZED')
1201 FORMAT(2X,'MINUTES',3X,'FRACTIONAL',3X,'HALF-LIFES',10X,'MMG PER M
     &IN',6X,'NORMALIZED')
1202 FORMAT(1H ,2X,'PRPAB = CONVERSION FACTOR, CALIBRATION PPM/AB',15X,
     &F12.5)
1203 FORMAT(1H ,26X,'COVLQ = CONVERSION FACTOR, CALIBRATION MICROGRAMS/
     &PPM',7X,F14.5/)
1204 FORMAT(1H ,2X,'COVLQ = CONVERSION FACTOR, CALIBRATION MICROGRAMS/P
     &PM',7X,F12.5)
1205 FORMAT(1H ,26X,'PERCP = PERCENT COPOLYMER THICKENER IN LIQUID SIMU
     &LANT',6X,F14.5/)
1206 FORMAT(1H ,2X,'PERCP = PERCENT COPOLYMER THICKENER IN LIQUID SIMUL
     &ANT',6X,F12.5)
1207 FORMAT(1H ,26X,'PRPAB = CONVERSION FACTOR, CALIBRATION PP/AB',15X,
     &F14.5/)
1209 FORMAT(1X,F7.1,5X,F6.3,6X,F6.3,14X,F9.3,8X,F9.3)
1210 FORMAT(26X,F6.1,5X,F6.4,5X,F9.5,10X,F14.5,8X,F12.5)
1211 FORMAT(26X,F6.1.5X,F6.4,8X,A6,10X,F14.5,8X,F12.5)
1212 FORMAT(/26X,'NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQ
     &UID CONTAMINATION REMAINING.')
1213 FORMAT(1H0,1X,'NORMALIZED: MMG PER MIN PER FRACTION OF LIQUID DROP
     &LET CONTAMINATION REMAINING')
1214 FORMAT(2X,F6.1,5X,F6.3,8X,A,14X,F9.3,8X,F9.3)
1215 FORMAT(1H ,26X,'Z = X*Y',53X,F14.5/)
1216 FORMAT(1H ,2X,'Z = X*Y',53X,F12.5)
1217 FORMAT(1H ,52X,'PARAMETERS'/)
1218 FORMAT(1H0,28X,'PARAMETERS')
1220 FORMAT(1H ,26X,'X =     ACVTM*ABPV*COVLQ*1E-6',32X,F14.5/)
1221 FORMAT(1H ,2X,'X =      ACVTM*ABPV*COVLQ*1E-6',31X,F12.5)
1230 FORMAT(1H ,26X,'Y =     AIRSP*DARTN*.02832*88/144',28X,F14.5/)
1231 FORMAT(1H ,2X,'Y =      AIRSP*DARTN*.02832*88/144',27X,F12.5)
1236 FORMAT(1H ,26X,'DARTN = ASSUMED DYNAMIC CROSS-SECTIONAL AREA OF TU
     &NNEL SQIN',1X,F14.5/)
1237 FORMAT(1H ,2X,'DARTN = ASSUMED DYNAMIC CROSS-SECTIONAL AREA OF TUN
     &EL SQIN',1X,F12.5)
1240 FORMAT(1H ,26X,'TRAYM = TOTAL MASS ON TEST SUBSTRATES, GRAMS',16X,
     &F14.5/)
1241 FORMAT(1H ,2X,'TRAYM = TOTAL MASS ON TEST SUBSTRATES, GRAMS',16X,F
     &12.5)
1242 FORMAT(1H ,26X,'NCODE = TEST CONFIGURATION OF SUBSTRATES',23X,I5/)
1243 FORMAT(1H ,2X,'NCODE = TEST CONFIGURATION OF SUBSTRATES',21X,I5)
1244 FORMAT(1H ,26X,'CODEL = LIQUID SIMULANT CODE',32X,F14.5/)
1245 FORMAT(1H ,2X,'CODEL = LIQUID SIMULANT CODE',32X,F12.5)
1246 FORMAT(1H ,26X,'TMASS = TEST DROPLET MASS, GRAMS',28X,F14.5/)
1247 FORMAT(1H ,2X,'TMASS = TEST DROPLET MASS, GRAMS',28X,F12.5)
1248 FORMAT(1H ,26X,'CMASS = TEST DROPLET MASS CORRECTED FOR COPLOYMER,
     & GRAMS',4X,F14.5/)
1249 FORMAT(1H ,2X,'CMASS = TEST DROPLET MASS CORRECTED FOR COPLOYMER,
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     &GRAMS',4X,F12.5)
1250 FORMAT(1H ,26X,'CPMAB = CONVERSION FACTOR, MASS BALANCE PPM/AB',14
     &X,F14.5/)
1251 FORMAT(1H ,2X,'CPMAB = CONVERSION FACTOR, MASS BALANCE PPM/AB',F1
     &2.5)
1260 FORMAT(1H ,26X,'TVCF3 = CORRECTION FACTOR FOR NUMBER OF SUBSTRATES
     &',10X,F14.5/)
1261 FORMAT(1H ,2X,'TVCF3 = CORRECTION FACTOR FOR NUMBER OF SUBSTRATES'
     &,10X,F12.5)
1270 FORMAT(1H ,26X,'CCVR1 = ABPV*CPMAB*TVCF3, PPM/VOLT',26X,F14.5/)
1271 FORMAT(1H ,2X,'CCVR1 = ABPV*CPMAB*TVCF3, PPM/VOLT',26X,F12.5)
1280 FORMAT(1H ,26X,'ACVTM = TOTAL ACCUMULATIVE VOLT.MIN',25X,F14.5/)
1281 FORMAT(1H ,2X,'ACVTM = TOTAL ACCUMULATIVE VOLT.MIN',25X,F12.5)
1288 FORMAT(1H ,2X,'HAFTM = HALF-LIFE OF DROPLET, MINUTES',30X,A)
1289 FORMAT(1H ,2X,'HAFTM = HALF-LIFE OF DROPLET, MINUTES',23X,F12.5)
1290 FORMAT(1H ,26X,'HAFTM = HALF-LIFE OF DROPLET, MINUTES',23X,F14.5)
1291 FORMAT(1H ,26X,'HAFTM = HALF-LIFE OF DROPLET, MINUTES',30X,A)
1292 FORMAT(1H ,26X,'CK    = LN2/HAFTM, USED IN DEFINING TK',22X,F14.5/
     &)
1293 FORMAT(1H ,2X,'CK    = LN2/HAFTM, USED IN DEFINING TK',22X,F12.5)
1300 FORMAT(1H ,26X,'T2    = VALUE USED IN INTERPOLATION FOR HALF-LIFE
     &, MIN',5X,F14.5)
1301 FORMAT(1H ,5X,'T2 = VALUE USED IN INTERPOLATION FOR HALF-LIFE, MIN
     &',6X,F12.5)
1310 FORMAT(1H ,26X,'T     = VALUE USED IN INTERPOLATION FOR HALF-LIFE
     &, MIN',5X,F14.5)
1311 FORMAT(1H ,5X,'T1 = VALUE USED IN INTERPOLATION FOR HALF-LIFE, MIN
     &',6X,F12.5)
1320 FORMAT(1H ,26X,'V     = VALUE USED IN INTERPOLATION FOR HALF-LIFE'
     &,11X,F14.5)
1321 FORMAT(1H ,5X,'V2 = VALUE USED IN INTERPOLATION FOR HALF-LIFE',11X
     &,F12.5)
1325 FORMAT(1H ,2X,'ENDVT MONITORS WHETHER EVAPORATION IS COMPLETE (0.0
     &) OR NOT (1.0):',2X,F3.1)
1326 FORMAT(/2X,'ERHLF = EVAPORATION RATE AVERAGED OVER ONE-HALF-LIFE,
     &MMG/MIN',7X,A)
1327 FORMAT(1H ,2X,'ERTMX = EVAPORATION RATE AVERAGED OVER DURATION OF
     &TEST:MMG/MIN',F9.5)
1328 FORMAT(3X,'ERHLF = EVAPORATION RATE AVERAGED OVER ONE-HALF-LIFE,
     &MMG/MIN',F10.5)
1329 FORMAT(1H ,5X,'V1 = VALUE USED IN INTERPOLATION FOR HALF-LIFE',11X
     &,F12.5)
1330 FORMAT(1H ,26X,'V1    = VALUE USED IN INTERPOLATION FOR HALF-LIFE'
     &,11X,F14.5/)
1331 FORMAT(1H ,26X,'ERHLF = EVAPORATION RATE AVERAGED OVER ONE-HALF-LI
     &FE, MMG/MIN',F13.5/)
1332 FORMAT(1H ,26X,'ERTMX = EVAPORATION RATE AVERAGED OVER DURATION OF
     & TEST:MMG/MIN',F11.5/)
1333 FORMAT(1H ,26X,'ERHLF = EVAPORATION RATE AVERAGED OVER ONE-HALF-
     &LIFE, MMG/MIN',9X,A/)
1334 FORMAT(1H ,26X,'ENDVT=MONITORS WHETHER EVAPORATION IS COMPLETE (0.
     &0) OR NOT (1.0):',2X,F3.1)
1335 FORMAT(1H ,26X,'ERTMX = EVAPORATION RATE AVERAGED OVER DURATION OF
     & TEST;MMG/MIN',6X,A/)
1336 FORMAT(1H ,2X,'ERTMX = EVAPORATION RATE AVERAGED OVER DURATION OF
     &TEST MMG/MIN',6X,A)
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 1400 FORMAT(1H ,27X,'EFFECTIVE WINDSPEED FOR TEST TO ACHIEVE PPM/AB OF
     &CALIBRATION FOR TEST DATA'/)
 1401 FORMAT(1X,'EFFECTIVE WINDSPEED FOR TEST TO ACHIEVE PPM/AB OF CALIB
     &RATION FOR TEST DATA'/)
 1410 FORMAT(1H ,37X,'ASSUMED WINDSPEED FOR DYNAMIC CROSS-SECTIONAL AREA
     & SQ INCHES'/)
 1411 FORMAT(1H0,8X,'ASSUMED WINDSPEED FOR DYNAMIC CROSS SECTIONAL AREA
     &SQ INCHES')
 1420 FORMAT(1H ,28X,'PPM/AB',5X,'10.5 X 4.0 SQ IN',6X,'10.25 X 3.75 SQ
     & IN',6X,'10.0 X 3.5 SQ IN'/)
 1421 FORMAT(1H0,3X,'PPM/AB',5X,'10.5 X 4.0 SQ IN',6X,'10.25 X 3.75 SQ I
     &N',5X,'10.0 X 3.5 SQ IN')
 1425 FORMAT(1H ,28X,'PPM/AB',5X,'10.5 X 4.0 SQ IN',6X,'10.25 X 3.75 SQ
     & IN',6X,'10.0 X 3.5 SQ IN'/)
 1426 FORMAT(1H0,3X,'PPM/AB',5X,'10.5 X 4.0 SQ IN',6X,'10.25 X 3.75 SQ I
     &N',5X,'10.0 X 3.5 SQ IN')
 1430 FORMAT(1H ,30X,'+/-',8X,'MPH',7X,'FPM',9X,'MPH',9X,'FPM',10X,'MPH'
     &,7X,'FPM'/)
 1431 FORMAT(1H0,4X,'+/-',9X,'MPH',6X,'FPM',9X,'MPH',8X,'FPM',9X,'MPH',8
     &X,'FPM')
 1440 FORMAT(1H ,28X,F6.1,3X,F8.2,F10.0,4X,F8.2,4X,F8.0,5X,F8.2,F10.0/)
 1441 FORMAT(1H0,2X,F6.1,4X,F8.2,1X,F8.0,4X,F8.2,3X,F8.0,4X,F8.2,F11.0)
 1500 FORMAT(1H1,///////////////////////////)
 1510 FORMAT(1H1,////,3X,'THE DATA FILE TO BE READ MUST BE IN DRIVE B')
 1515 FORMAT(1H ,2X,'DATA FILES HAVE ASSIGNED NAMES SUCH AS - GLF1.DAT')
 1520 FORMAT(1H ,2X,'INPUT - NAME OF DATA FILE TO READ'/)
 1521 FORMAT(1H0,'********************* TABLE PRINT OPTIONS ************
     &***********')
 1522 FORMAT(1H ,3X,'FOUR OPTIONS ARE AVAILABLE FOR VIEWING OR PRINTING
     &THE TABLES')
 1523 FORMAT(1H ,10X,'PRINT TABLES ON SCREEN, ONLY                -OPTION
     & -1?')
 1524 FORMAT(1H ,10X,'PRINT TABLES ON SCREEN & IN  A FILE         -OPTION
     & -2?')
 1525 FORMAT(1H ,10X,'PRINT TABLES ON SCREEN, IN FILE & PRINTER -OPTION
     & -3?')
 1526 FORMAT(1H ,10X,'PRINT TABLES ON SCREEN & ON THE PRINTER    -OPTION
     & -4?')
 1529 FORMAT(I1)
 1530 FORMAT(1H0,20X,'DO YOU WISH TO RUN THE PROGRAM AGAIN?')
 1531 FORMAT(1H0,'PAUSE AFTER DISPLAYING EACH TABLE ON THE SCREEN?')
 1532 FORMAT(1H ,'FOR A PAUSE             ENTER OPTION - 1 -')
 1533 FORMAT(1H ,'FOR CONTINUOUS DISPLAY ENTER OPTION - 2 -')
 1540 FORMAT(1H0,13X,'ANSWER Y FOR YES OR N FOR NO....THEN PRESS ENTER')
 1548 FORMAT(1H ,F10.2)
 1888 FORMAT(/27X,'* MICROGRAMS PER CUBIC METER')
 1889 FORMAT(1H0,3X,'* MICROGRAMS PER CUBIC METER')
 2000 FORMAT(1H1)
 9900 FORMAT(1H1,'DATA ERROR IN INPUT')
C
 9000 WRITE(*,9900)
      STOP
 9999 CONTINUE
      END
```

Name	Type	Offset	P	Class
A	REAL	5506		
ABPV	REAL	5204		
ACDMF	REAL	5594		
ACDMG	REAL	5590		
ACDMN	REAL	5626		
ACVTM	REAL	5374		
AFPM1	REAL	5774		
AFPM2	REAL	5782		
AFPM3	REAL	5790		
AHPRA	REAL	5738		
AIRSP	REAL	5196		
ALOG				INTRINSIC
ALPRA	REAL	5766		
AMPH1	REAL	5770		
AMPH2	REAL	5778		
AMPH3	REAL	5786		
ANSWER	CHAR*1	5236		
ARCR1	REAL	5706		
ARCR2	REAL	5710		
AREAH	REAL	5698		
AREAL	REAL	5702		
AX	REAL	5586		
B	REAL	5510		
BX	REAL	5598		
C	REAL	5514		
CAL	REAL	5200		
CCDD	REAL	4700		
CCDT	REAL	3900		
CCUMD	REAL	4540		
CCUMT	REAL	4220		
CCVR1	REAL	5486		
CGSQM	REAL	4380		
CK	REAL	5422		
CMASS	REAL	5362		
CODEL	REAL	5192		
COVL1	REAL	5278		
COVL2	REAL	5282		
COVLQ	REAL	5294		
CPD1H	REAL	5266		
CPD1L	REAL	5262		
CPM2H	REAL	5274		
CPM2L	REAL	5270		
CPMAB	REAL	5482		
CPMD	REAL	4060		
CPMT	REAL	3260		
CSQMT	REAL	3740		
CUMDD	REAL	3580		
CUMDT	REAL	3420		
CV	REAL	5458		
CX	REAL	5602		
D	REAL	5518		
DARIN	REAL	5470		
DASR	CHAR*1	4860		

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D Line# 1       7
DENL1   REAL            5254
DENL2   REAL            5258
DENLQ   REAL            5290
DIFMS   REAL            5562
DISPLA  INTEGER*4       4880
DOSGD   REAL            5542
DOSGT   REAL            5538
DOSXD   REAL            5566
DOSXT   REAL            5562
DPP2    REAL            5642
DPP3    REAL            5638
DPPO    REAL            5630
DPPT    REAL            5184
DY      REAL            5606
ENDV    REAL            5220
ENDVT   REAL            5216
EODPD   REAL            5330
ERHLF   REAL            5414
ERTMX   REAL            5690
ETDPM   REAL            5318
EVAPM   REAL            3100
EVAPN   REAL            2300
EVPM5   REAL            2940
EVPN5   REAL            2460
EVPRM   REAL            2780
EVPRN   REAL            2620
EXP                             INTRINSIC
EXPGM   REAL            5354
FHL     REAL            5614
FNAME   CHAR*14         4861
FRHT    REAL            1980
FRT     REAL            5610
FRTM    REAL            2140
GM1TP   REAL            5172
GM2TP   REAL            5176
GM3TP   REAL            5180
GPM21   REAL            5238
GPM22   REAL            5242
GPM23   REAL            5246
GPM24   REAL            5250
HAFTM   REAL            5410
HAFVT   REAL            5390
HTBL    INTEGER*4       *****
I       INTEGER*4       5224
II      INTEGER*4       5438
IVOL    INTEGER*4       1800
LL1     CHAR*72         4884
LL2     CHAR*72         4956
LL3     CHAR*72         5028
LL4     CHAR*72         5100
N       INTEGER*4       5382
NCODE   INTEGER*4       5188
NOPTS   INTEGER*4       5212
NQ      INTEGER*4       *****
NSET    INTEGER*4       5350
NSIT    INTEGER*4       4876
```


APPENDIX A

NTBL	INTEGER*4	5434
NTRAY	INTEGER*4	5342
PERCP	REAL	5286
PRPAB	REAL	5298
RMAS	REAL	5654
SDMAS	REAL	5322
SEMAS	REAL	5326
SFPM1	REAL	5746
SFPM2	REAL	5754
SFPM3	REAL	5762
SMAS	REAL	5646
SMPH1	REAL	5742
SMPH2	REAL	5750
SMPH3	REAL	5758
SUMEV	REAL	5674
SUMVS	REAL	1480
T1	REAL	5398
T2	REAL	5394
TIM	REAL	5450
TIMER	REAL	1640
TIMT	REAL	5550
TK	REAL	5430
TM1	REAL	5302
TM2	REAL	5306
TM3	REAL	5310
TMASS	REAL	5358
TMEAC	REAL	1000
TMINV	REAL	5208
TRAYM	REAL	5346
TTMT	REAL	5314
TVCF3	REAL	5334
V	REAL	5454
V1	REAL	5406
V2	REAL	5402
VCDD	REAL	1320
VCDT	REAL	1160
VCPGM	REAL	5502
VCPMS	REAL	5498
VGPT	REAL	5338
VN	REAL	5462
VOLT	REAL	20
VOLTM	REAL	5366
VOLTN	REAL	840
VPPMD	REAL	[illegible]
VPPMT	REAL	[illegible]
WDTUN	REAL	5474
WFPM1	REAL	5718
WFPM2	REAL	5726
WFPM3	REAL	5734
WMPH1	REAL	5714
WMPH2	REAL	5722
WMPH3	REAL	5730
X	REAL	5466
XGSQM	REAL	520
XMASD	REAL	5574
XRMAS	REAL	5658

XSMAS	REAL	5650
XSQMT	REAL	360
XX	REAL	5682
Y	REAL	5378
YY	REAL	5686
Z	REAL	5478

Name	Type	Size	Class
MIRAN			PROGRAM

Pass One No Errors Detected
1902 Source Lines

Blank

APPENDIX B

OUTPUT VOLTAGE DATA FROM A MIRAN IA VAPOR ANALYZER

TABLE B-1

EVAPORATION EXPERIMENT NO. GLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 45%

OUTPUT VOLTAGE DATA FROM MIRAN 1A VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.1280	.0	.000	.000000
30.0	.1160	30.0	3.660	.086574
60.0	.1010	60.0	6.915	.163568
90.0	.0920	90.0	9.810	.232047
120.0	.0840	120.0	12.450	.294493
150.0	.0770	150.0	14.865	.351618
180.0	.0680	180.0	17.040	.403066
210.0	.0630	210.0	19.005	.449546
240.0	.0570	240.0	20.805	.492123
270.0	.0510	270.0	22.425	.530443
300.0	.0460	300.0	23.880	.564859
330.0	.0410	330.0	25.185	.595728
360.0	.0360	360.0	26.340	.623049
390.0	.0320	390.0	27.360	.647176
420.0	.0280	420.0	28.260	.668464
450.0	.0230	450.0	29.025	.686560
480.0	.0190	480.0	29.655	.701462
510.0	.0150	510.0	30.165	.713525
540.0	.0120	540.0	30.570	.723105
570.0	.0100	570.0	30.900	.730911
600.0	.0080	600.0	31.170	.737298
630.0	.0060	630.0	31.380	.742265
660.0	.0050	660.0	31.545	.746168
690.0	.0040	690.0	31.680	.749361
720.0	.0030	720.0	31.785	.751845
750.0	.0020	750.0	31.860	.753619
780.0	.0020	780.0	31.920	.755038
810.0	.0010	810.0	31.965	.756103
840.0	.0010	840.0	31.995	.756812
870.0	.0000	870.0	32.010	.757167

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-2

EVAPORATION EXPERIMENT NO. GLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.1130	.0	.000	.000000
30.0	.1050	30.0	3.270	.074235
60.0	.0970	60.0	6.300	.143022
90.0	.0900	90.0	9.105	.206701
120.0	.0840	120.0	11.715	.265953
150.0	.0790	150.0	14.160	.321460
180.0	.0730	180.0	16.440	.373220
210.0	.0680	210.0	18.555	.421235
240.0	.0640	240.0	20.535	.466185
270.0	.0590	270.0	22.380	.508070
300.0	.0540	300.0	24.075	.546550
330.0	.0500	330.0	25.635	.581965
360.0	.0460	360.0	27.075	.614655
390.0	.0420	390.0	28.395	.644622
420.0	.0380	420.0	29.595	.671864
450.0	.0340	450.0	30.675	.696382
480.0	.0300	480.0	31.635	.718176
510.0	.0260	510.0	32.475	.737246
540.0	.0220	540.0	33.195	.753591
570.0	.0190	570.0	33.810	.767553
600.0	.0160	600.0	34.335	.779472
630.0	.0130	630.0	34.770	.789347
660.0	.0110	660.0	35.130	.797520
690.0	.0100	690.0	35.445	.804671
720.0	.0080	720.0	35.715	.810800
750.0	.0070	750.0	35.940	.815908
780.0	.0070	780.0	36.150	.820676
810.0	.0060	810.0	36.345	.825103
840.0	.0050	840.0	36.510	.828848
870.0	.0040	870.0	36.645	.831913
900.0	.0030	900.0	36.750	.834297
930.0	.0020	930.0	36.825	.836000
960.0	.0010	960.0	36.870	.837021
990.0	.0010	990.0	36.900	.837702
1020.0	.0000	1020.0	36.915	.838043

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-3

EVAPORATION EXPERIMENT NO. GLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0860	.0	.000	.000000
15.0	.0750	15.0	1.208	.117196
30.0	.0660	30.0	2.265	.219834
45.0	.0590	45.0	3.203	.310825
60.0	.0520	60.0	4.035	.391624
75.0	.0460	75.0	4.770	.462961
90.0	.0410	90.0	5.423	.526291
105.0	.0360	105.0	6.000	.582341
120.0	.0310	120.0	6.503	.631112
135.0	.0260	135.0	6.930	.672604
150.0	.0210	150.0	7.283	.706816
165.0	.0180	165.0	7.575	.735206
180.0	.0150	180.0	7.823	.759227
195.0	.0120	195.0	8.025	.778881
210.0	.0090	210.0	8.183	.794168
225.0	.0070	225.0	8.303	.805814
240.0	.0050	240.0	8.393	.814550
255.0	.0040	255.0	8.460	.821101
270.0	.0040	270.0	8.520	.826924
285.0	.0030	285.0	8.573	.832020
300.0	.0030	300.0	8.618	.836387
315.0	.0020	315.0	8.655	.840027
330.0	.0010	330.0	8.678	.842211
345.0	.0010	345.0	8.693	.843667
360.0	.0000	360.0	8.700	.844395

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-4

EVAPORATION EXPERIMENT NO. GLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0730	.0	.000	.000000
10.0	.0720	10.0	.725	.060349
20.0	.0710	20.0	1.440	.119866
30.0	.0680	30.0	2.[illegible]35	.177718
40.0	.0640	40.0	2.795	.232657
50.0	.0600	50.0	3.415	.284266
60.0	.0580	60.0	4.005	.333378
70.0	.0550	70.0	4.570	.380409
80.0	.0520	80.0	5.105	.424943
90.0	.0490	90.0	5.610	.466979
100.0	.0470	100.0	6.090	.506935
110.0	.0440	110.0	6.545	.544809
120.0	.0410	120.0	6.970	.580186
130.0	.0390	130.0	7.370	.613483
140.0	.0370	140.0	7.750	.645114
150.0	.0340	150.0	8.105	.674664
160.0	.0320	160.0	8.435	.702134
170.0	.0300	170.0	8.745	.727938
180.0	.0280	180.0	9.035	.752078
190.0	.0260	190.0	9.305	.774553
200.0	.0240	200.0	9.555	.795363
210.0	.0220	210.0	9.785	.814508
220.0	.0200	220.0	9.995	.831989
230.0	.0180	230.0	10.185	.847805
240.0	.0160	240.0	10.355	.861955
250.0	.0140	250.0	10.505	.874442
260.0	.0130	260.0	10.640	.885679
270.0	.0110	270.0	10.760	.895668
280.0	.0090	280.0	10.860	.903992
290.0	.0080	290.0	10.945	.911067
300.0	.0070	300.0	11.020	.917310
310.0	.0060	310.0	11.085	.922721
320.0	.0050	320.0	11.140	.927299
330.0	.0040	330.0	11.185	.931045
340.0	.0020	340.0	11.215	.933542
350.0	.0020	350.0	11.235	.935207
360.0	.0010	360.0	11.250	.936456
370.0	.0000	370.0	11.255	.936872

MIRAN VAPOR ANALYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-5

EVAPORATION EXPERIMENT NO. GLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED [illegible].0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 58%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER	OUTPUT	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES		
TIME MINUTES	ABSORBANCE VOLTS	ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0780	.0	.000	.000000
30.0	.0740	30.0	2.280	.060352
60.0	.0710	60.0	4.455	.117924
90.0	.0670	90.0	6.525	.172717
120.0	.0630	120.0	8.475	.224334
150.0	.0600	150.0	10.320	.273171
180.0	.0560	180.0	12.060	.319229
210.0	.0530	210.0	13.695	.362507
240.0	.0500	240.0	15.240	.403404
270.0	.0470	270.0	16.695	.441917
300.0	.0640	300.0	18.060	.478049
330.0	.0400	330.0	19.320	.511401
360.0	.0360	360.0	20.460	.541577
390.0	.0330	390.0	21.495	.568974
420.0	.0300	420.0	22.440	.593988
450.0	.0280	450.0	23.310	.617017
480.0	.0250	480.0	24.105	.638060
510.0	.0230	510.0	24.825	.657119
540.0	.0210	540.0	25.485	.674589
570.0	.0180	570.0	26.070	.690074
600.0	.0160	600.0	26.580	.703574
630.0	.0130	630.0	27.015	.715088
660.0	.0110	660.0	27.375	.724617
690.0	.0080	690.0	27.660	.732161
720.0	.0060	720.0	27.870	.737720
750.0	.0040	750.0	28.020	.741691
780.0	.0030	780.0	28.125	.744470
810.0	.0020	810.0	28.200	.746455
840.0	.0010	840.0	28.245	.747646
870.0	.0000	870.0	28.260	.748043

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-6

EVAPORATION EXPERIMENT NO. GLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 5.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER	OUTPUT	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES		
TIME	ABSORBANCE	ELAPSED TIME	TOTAL	TOTAL
MINUTES	VOLTS	MINUTES	VOLT.MIN	NORMALIZED
.0	.0750	.0	.000	.000000
30.0	.0740	30.0	2.250	.054340
60.0	.0710	60.0	4.425	.106868
90.0	.0700	90.0	6.540	.157948
120.0	.0660	120.0	8.580	.207216
150.0	.0640	150.0	10.530	.254310
180.0	.0620	180.0	12.420	.299956
210.0	.0590	210.0	14.235	.343790
240.0	.0560	240.0	15.960	.385450
270.0	.0530	270.0	17.595	.424937
300.0	.0500	300.0	19.140	.462250
330.0	.0470	330.0	20.595	.497390
360.0	.0440	360.0	21.960	.530356
390.0	.0410	390.0	23.235	.561149
420.0	.0380	420.0	24.420	.589768
450.0	.0350	450.0	25.515	.616213
480.0	.0320	480.0	26.520	.640485
510.0	.0290	510.0	27.435	.662583
540.0	.0260	540.0	28.260	.682508
570.0	.0230	570.0	28.995	.700259
600.0	.0200	600.0	29.640	.715836
630.0	.0170	630.0	30.195	.729240
660.0	.0140	660.0	30.660	.740470
690.0	.0110	690.0	31.035	.749527
720.0	.0080	720.0	31.320	.756410
750.0	.0060	750.0	31.530	.761482
780.0	.0050	780.0	31.695	.765466
810.0	.0030	810.0	31.815	.768365
840.0	.0020	840.0	31.890	.770176
870.0	.0010	870.0	31.935	.771265
900.0	.0000	900.0	31.950	.7716[illegible]

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-7

EVAPORATION EXPERIMENT NO. GLF7 SERIES IO 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 58%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0480	.0	.000	.000000
15.0	.0450	15.0	.697	.060915
30.0	.0430	30.0	1.358	.118554
45.0	.0420	45.0	1.995	.174229
60.0	.0400	60.0	2.610	.227939
75.0	.0380	75.0	3.195	.279028
90.0	.0370	90.0	3.758	.328153
105.0	.0350	105.0	4.298	.375313
120.0	.0340	120.0	4.815	.420507
135.0	.0320	135.0	5.310	.463737
150.0	.0310	150.0	5.782	.505002
165.0	.0290	165.0	6.232	.544302
180.0	.0270	180.0	6.652	.580981
195.0	.0260	195.0	7.050	.615696
210.0	.0240	210.0	7.425	.648446
225.0	.0220	225.0	7.770	.678576
240.0	.0200	240.0	8.085	.706086
255.0	.0180	255.0	8.370	.730975
270.0	.0160	270.0	8.625	.753245
285.0	.0140	285.0	8.850	.772895
300.0	.0130	300.0	9.052	.790580
315.0	.0110	315.0	9.233	.806300
330.0	.0090	330.0	9.382	.819400
345.0	.0070	345.0	9.502	.829880
360.0	.0060	360.0	9.600	.838395
375.0	.0050	375.0	9.682	.845609
390.0	.0040	390.0	9.750	.851495
405.0	.0030	405.0	9.802	.856080
420.0	.0020	420.0	9.840	.859355
435.0	.0020	435.0	9.870	.861975
450.0	.0010	450.0	9.892	.863940
465.0	.0010	465.0	9.908	.865250
480.0	.0000	480.0	9.915	.865905

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-8

EVAPORATION EXPERIMENT NO. GLF8 SERIES 1D 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0450	.0	.000	.000000
15.0	.0430	15.0	.660	.056531
30.0	.0420	30.0	1.298	.111135
45.0	.0410	45.0	1.920	.164454
60.0	.0390	60.0	2.520	.215846
75.0	.0380	75.0	3.097	.265311
90.0	.0360	90.0	3.652	.312849
105.0	.0350	105.0	4.185	.358459
120.0	.0340	120.0	4.702	.402784
135.0	.0320	135.0	5.197	.445183
150.0	.0310	150.0	5.670	.4856[illegible]4
165.0	.0290	165.0	6.120	.524198
180.0	.0280	180.0	6.547	.560815
195.0	.0260	195.0	6.952	.595504
210.0	.0250	210.0	7.335	.628[illegible]67
225.0	.0230	225.0	7.695	.659102
240.0	.0220	240.0	8.033	.688010
255.0	.0200	255.0	8.347	714991
270.0	.0190	270.0	8.640	.740044
285.0	.0170	285.0	8.910	.7631[illegible]
300.0	.0160	300.0	9.158	.784370
315.0	.0140	315.0	9.383	.803642
330.0	.0130	330.0	9.585	.820987
345.0	.01[illegible]	345.0	9.765	.836404
360 0	.0090	360.0	9.915	.8[illegible]9252
375.0	.0[illegible]80	375.0	10.0[illegible]3	.860173
390.0	.0060	390.0	10.148	.869167
405.0	0050	405.0	10.230	.876233
420.0	.0030	420.0	10.290	.881372
435.0	.0020	435.0	10.328	.884584
450.0	.0010	450.0	10.350	.8[illegible]6511
465.0	.0010	465.0	10.365	.887796
480.0	.0000	480.0	10.373	.888439

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-9

EVAPORATION EXPERIMENT NO. GLF9 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.1410	.0	.000	.000000
30.0	.0900	30.0	3.465	.090853
60.0	.0840	60.0	6.075	.159288
90.0	.0820	90.0	8.565	.224576
120.0	.0750	120.0	10.920	.286325
150.0	.0700	150.0	13.095	.343353
180.0	.0660	180.0	15.135	.396843
210.0	.0610	210.0	17.040	.446792
240.0	.0570	240.0	18.810	.493202
270.0	.0520	270.0	20.445	.536072
300.0	.0480	300.0	21.945	.575402
330.0	.0430	330.0	23.310	.611193
360.0	.0390	360.0	24.540	.643444
390.0	.0340	390.0	25.635	.672155
420.0	.0300	420.0	26.575	.697326
450.0	.0250	450.0	27.420	.718958
480.0	.0210	480.0	28.110	.737050
510.0	.0170	510.0	28.680	.751995
540.0	.0140	540.0	29.145	.764188
570.0	.0110	570.0	29.520	.774020
600.0	.0080	600.0	29.805	.781493
630.0	.0060	630.0	30.015	.786999
660.0	.0040	660.0	30.165	.790932
690.0	.0030	690.0	30.270	.793685
720.0	.0020	720.0	30.345	.795652
750.0	.0010	750.0	30.390	.796832
780.0	.0000	780.0	30.405	.797225

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-10

EVAPORATION EXPERIMENT NO. GLF10 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 52%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.1350	.0	.000	.000000
30.0	.0970	30.0	3.480	.073736
60.0	.0910	60.0	6.300	.133488
90.0	.0860	90.0	8.955	.189743
120.0	.0830	120.0	11.490	.243456
150.0	.0790	150.0	13.920	.294944
180.0	.0750	180.0	16.230	.343889
210.0	.0720	210.0	18.435	.390610
240.0	.0680	240.0	20.535	.435106
270.0	.0650	270.0	22.530	.477377
300.0	.0600	300.0	24.405	.517105
330.0	.0570	330.0	26.160	.554291
360.0	.0530	360.0	27.810	.589252
390.0	.0490	390.0	29.340	.621670
420.0	.0450	420.0	30.750	.651546
450.0	.0400	450.0	32.025	.678562
480.0	.0350	480.0	33.150	.702399
510.0	.0310	510.0	34.140	.723375
540.0	.0270	540.0	35.010	.741809
570.0	.0230	570.0	35.760	.757701
600.0	.0200	600.0	36.405	.771367
630.0	.0160	630.0	36.945	.782809
660.0	.0140	660.0	37.395	.792344
690.0	.0120	690.0	37.785	.800607
720.0	.0100	720.0	38.115	.807599
750.0	.0080	750.0	38.385	.813320
780.0	.0060	780.0	38.595	.817770
810.0	.0050	810.0	38.760	.821266
840.0	.0040	840.0	38.895	.824126
870.0	.0030	870.0	39.000	.826351
900.0	.0010	900.0	39.060	.827623
930.0	.0010	930.0	39.090	.828258
960.0	.0000	960.0	39.105	.828576

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-11

EVAPORATION EXPERIMENT NO. GLF11 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 50 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT MIN	TOTAL NORMALIZED
.0	.0650	.0	.000	.000000
10.0	.0620	10.0	.635	.061070
20.0	.0590	20.0	1.240	.119255
30.0	.0570	30.0	1.820	.175036
40.0	.0540	40.0	2.375	.228412
50.0	.0520	50.0	2.905	.279384
60.0	.0490	60.0	3.410	.327952
70.0	.0470	70.0	3.890	.374115
80.0	.0450	80.0	4.350	.418355
90.0	.0430	90.0	4.790	.460673
100.0	.0400	100.0	5.205	.500584
110.0	.0380	110.0	5.595	.538091
120.0	.0350	120.0	5.960	.573195
130.0	.0330	130.0	6.300	.605894
140.0	.0310	140.0	6.620	.636669
150.0	.0280	150.0	6.915	.665040
160.0	.0260	160.0	7.185	.691007
170.0	.0240	170.0	7.435	.715051
180.0	.0220	180.0	7.665	.737171
190.0	.0190	190.0	7.870	.756886
200.0	.0170	200.0	8.050	.774197
210.0	.0150	210.0	8.210	.789585
220.0	.0130	220.0	8.350	.803050
230.0	.0120	230.0	8.475	.815071
240.0	.0100	240.0	8.585	.825650
250.0	.0090	250.0	8.680	.834787
260.0	.0080	260.0	8.765	.842962
270.0	.0070	270.0	8.840	.850175
280.0	.0060	280.0	8.905	.856426
290.0	.0050	290.0	8.960	.861715
300.0	.0040	300.0	9.005	.866043
310.0	.0030	310.0	9.040	.869409
320.0	.0030	320.0	9.070	.872294
330.0	.0020	330.0	9.095	.874699
340.0	.0010	340.0	9.110	.876143
350.0	.0010	350.0	9.120	.877103
360.0	.0000	360.0	9.125	.877586

MIRAN VAPOR ANALYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-12

EVAPORATION EXPERIMENT NO. GLF12 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0540	.0	.000	.000000
10.0	.0520	10.0	.530	.044117
20.0	.0510	20.0	1.045	.086986
30.0	.0490	30.0	1.545	.128607
40.0	.0470	40.0	2.025	.168562
50.0	.0460	50.0	2.490	.207269
60.0	.0450	60.0	2.945	.245143
70.0	.0430	70.0	3.385	.281769
80.0	.0420	80.0	3.810	.317146
90.0	.0410	90.0	4.225	.351691
100.0	.0400	100.0	4.630	.385404
110.0	.0390	110.0	5.025	.418284
120.0	.0380	120.0	5.410	.450331
130.0	.0360	130.0	5.780	.481130
140.0	.0350	140.0	6.135	.510680
150.0	.0340	150.0	6.480	.539398
160.0	.0330	160.0	6.815	.567284
170.0	.0320	170.0	7.140	.594337
180.0	.0300	180.0	7.450	.620142
190.0	.0290	190.0	7.745	.644698
200.0	.0280	200.0	8.030	.668421
210.0	.0270	210.0	8.305	.691312
220.0	.0250	220.0	8.565	.712955
230.0	.0240	230.0	8.810	.733349
240.0	.0220	240.0	9.040	.752494
250.0	.0210	250.0	9.255	.770391
260.0	.0190	260.0	9.455	.787039
270.0	.0180	270.0	9.640	.802438
280.0	.0170	280.0	9.815	.817006
290.0	.0150	290.0	9.975	.830324
300.0	.0140	300.0	10.120	.842394
310.0	.0120	310.0	10.250	.853215
320.0	.0100	320.0	10.360	.862372
330.0	.0090	330.0	10.455	.870279
340.0	.0080	340.0	10.540	.877355
350.0	.0060	350.0	10.610	.883182
360.0	.0050	360.0	10.665	.887760
370.0	.0030	370.0	10.705	.891090
380.0	.0020	380.0	10.730	.893171
390.0	.0000	390.0	10.740	.894003

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-13

EVAPORATION EXPERIMENT NO. GLF13 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

OUTPUT VOLTAGE DATA FROM MIRAN 1A VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT MIN	TOTAL NORMALIZED
.0	.0700	.0	.000	.000000
40.0	.0630	40.0	2.660	.066343
80.0	.0600	80.0	5.120	.127699
120.0	.0580	120.0	7.480	.186560
160.0	.0550	160.0	9.740	.242927
200.0	.0530	200.0	11.900	.296800
240.0	.0510	240.0	13.980	.348677
280.0	.0490	280.0	15.980	.398560
320.0	.0470	320.0	17.900	.446447
360.0	.0450	360.0	19.740	.492339
400.0	.0410	400.0	21.460	.535237
440.0	.0390	440.0	23.060	.575143
480.0	.0360	480.0	24.560	.612555
520.0	.0330	520.0	25.940	.646974
560.0	.0290	560.0	27.180	.677901
600.0	.0250	600.0	28.260	.704837
640.0	.0210	640.0	29.180	.727783
680.0	.0180	680.0	29.960	.747237
720.0	.0150	720.0	30.620	.763698
760.0	.0120	760.0	31.160	.777167
800.0	.0100	800.0	31.600	.788141
840.0	.0080	840.0	31.960	.797120
880.0	.0070	880.0	32.260	.804662
920.0	.0060	920.0	32.520	.811087
960.0	.0050	960.0	32.740	.816574
1000.0	.0040	1000.0	32.920	.821063
1040.0	.0030	1040.0	33.060	.824555
1080.0	.0020	1080.0	33.160	.827049
1120.0	.0020	1120.0	33.240	.829044
1160.0	.0020	1160.0	33.320	.831040
1200.0	.0010	1200.0	33.380	.832536
1240.0	.0010	1240.0	33.420	.833534
1280.0	.0000	1280.0	33.440	.834033

MIRAN VAPOR ANALYZER [illegible] ABSORBANCE UNITS PER VOLT

TABLE B-14

EVAPORATION EXPERIMENT NO. GLF14 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 43%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0700	.0	.000	.000000
40.0	.0670	40.0	2.740	.058898
80.0	.0640	80.0	5.360	.115216
120.0	.0620	120.0	7.880	.169385
160.0	.0600	160.0	10.320	.221834
200.0	.0580	200.0	12.680	.272564
240.0	.0550	240.0	14.940	.321144
280.0	.0530	280.0	17.100	.367574
320.0	.0510	320.0	19.180	.412285
360.0	.0490	360.0	21.180	.455276
400.0	.0460	400.0	23.080	.496118
440.0	.0440	440.0	24.880	.534810
480.0	.0410	480.0	26.580	.571352
520.0	.0380	520.0	28.160	.605315
560.0	.0350	560.0	29.620	.636699
600.0	.0320	600.0	30.960	.665503
640.0	.0290	640.0	32.180	.691727
680.0	.0250	680.0	33.260	.714943
720.0	.0220	720.0	34.200	.735148
760.0	.0200	760.0	35.040	.753205
800.0	.0170	800.0	35.780	.769112
840.0	.0150	840.0	36.420	.782869
880.0	.0130	880.0	36.980	.794906
920.0	.0090	920.0	37.420	.804364
960.0	.0060	960.0	37.720	.810813
1000.0	.0050	1000.0	37.940	.815542
1040.0	.0050	1040.0	38.140	.819841
1080.0	.0030	1080.0	38.300	.823280
1120.0	.0020	1120.0	38.400	.825430
1160.0	.0000	1160.0	38.440	.826290

IRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-15

EVAPORATION EXPERIMENT NO. GLF15 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0430	.0	.000	.000000
15.0	.0410	15.0	.630	.059574
30.0	.0390	30.0	1.230	.116312
45.0	.0380	45.0	1.808	.170922
60.0	.0360	60.0	2.362	.223404
75.0	.0350	75.0	2.895	.273758
90.0	.0340	90.0	3.412	.322694
105.0	.0330	105.0	3.915	.370212
120.0	.0310	120.0	4.395	.415602
135.0	.0300	135.0	4.852	.458864
150.0	.0290	150.0	5.295	.500708
165.0	.0270	165.0	5.715	.540424
180.0	.0260	180.0	6.113	.578013
195.0	.0250	195.0	6.495	.614183
210.0	.0240	210.0	6.863	.648934
225.0	.0220	225.0	7.207	.681558
240.0	.0200	240.0	7.523	.711346
255.0	.0180	255.0	7.807	.738296
270.0	.0160	270.0	8.063	.762409
285.0	.0140	285.0	8.288	.783686
300.0	.0120	300.0	8.483	.802125
315.0	.0100	315.0	8.648	.817728
330.0	.0080	330.0	8.783	.830494
345.0	.0060	345.0	8.887	.840423
360.0	.0050	360.0	8.970	.848225
375.0	.0040	375.0	9.038	.854608
390.0	.0030	390.0	9.090	.859572
405.0	.0020	405.0	9.128	.863118
420.0	.0010	420.0	9.150	.865246
435.0	.0010	435.0	9.165	.866664
450.0	.0010	450.0	9.180	.868083
465.0	.0000	465.0	9.188	.868792

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-16

EVAPORATION EXPERIMENT NO. GLF16 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0430	.0	.000	.000000
15.0	.0410	15.0	.630	.055303
30.0	.0390	30.0	1.230	.107973
45.0	.0380	45.0	1.808	.158667
60.0	.0360	60.0	2.362	.207387
75.0	.0350	75.0	2.895	.254131
90.0	.0340	90.0	3.412	.299559
105.0	.0330	105.0	3.915	.343669
120.0	.0320	120.0	4.403	.386463
135.0	.0310	135.0	4.875	.427941
150.0	.0300	150.0	5.332	.468101
165.0	.0280	165.0	5.767	.506287
180.0	.0280	180.0	6.188	.543156
195.0	.0260	195.0	6.593	.578708
210.0	.0250	210.0	6.975	.612284
225.0	.0240	225.0	7.343	.644545
240.0	.0220	240.0	7.688	.674839
255.0	.0210	255.0	8.010	.703140
270.0	.0200	270.0	8.318	.730133
285.0	.0180	285.0	8.602	.755151
300.0	.0160	300.0	8.858	.777535
315.0	.0140	315.0	9.083	.797287
330.0	.0120	330.0	9.278	.814404
345.0	.0090	345.0	9.435	.828230
360.0	.0070	360.0	9.555	.838764
375.0	.0050	375.0	9.645	.846664
390.0	.0030	390.0	9.705	.851931
405.0	.0020	405.0	9.743	.855223
420.0	.0010	420.0	9.765	.857198
435.0	.0000	435.0	9.773	.857857

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-17

EVAPORATION EXPERIMENT NO. BLF1 SERIES IO 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

OUTPUT VOLTAGE DATA FROM MIRAN 1A VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0780	.0	.000	.000000
45.0	.0730	45.0	3.398	.078690
90.0	.0690	90.0	6.592	.152691
135.0	.0660	135.0	9.630	.223043
180.0	.0630	180.0	12.532	.290269
225.0	.0600	225.0	15.300	.354368
270.0	.0560	270.0	17.910	.414819
315.0	.0530	315.0	20.362	.471622
360.0	.0480	360.0	22.635	.524256
405.0	.0440	405.0	24.705	.572200
450.0	.0390	450.0	26.572	.615453
495.0	.0350	495.0	28.237	.654017
540.0	.0300	540.0	29.700	.687890
585.0	.0250	585.0	30.937	.716552
630.0	.0210	630.0	31.972	.740524
675.0	.0160	675.0	32.805	.759806
720.0	.0130	720.0	33.457	.774919
765.0	.0090	765.0	33.952	.786384
810.0	.0070	810.0	34.312	.794722
855.0	.0040	855.0	34.560	.800454
900.0	.0030	900.0	34.717	.804102
945.0	.0020	945.0	34.830	.806708
990.0	.0020	990.0	34.920	.808792
1035.0	.0010	1035.0	34.987	.810356
1080.0	.0010	1080.0	35.032	.811398
1125.0	.0010	1125.0	35.077	.812440
1170.0	.0010	1170.0	35.122	.813482
1215.0	.0000	1215.0	35.145	.814003

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-18

EVAPORATION EXPERIMENT NO. BEF2 SERIES IB 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0890	.0	.000	.000000
40.0	.0840	40.0	3.460	.073730
80.0	.0800	80.0	6.740	.143624
120.0	.0770	120.0	9.880	.210534
160.0	.0740	160.0	12.900	.274888
200.0	.0710	200.0	15.800	.336684
240.0	.0680	240.0	18.580	.395924
280.0	.0650	280.0	21.240	.452606
320.0	.0620	320.0	23.780	.506731
360.0	.0590	360.0	26.200	.558299
400.0	.0560	400.0	28.500	.607310
440.0	.0520	440.0	30.660	.653338
480.0	.0490	480.0	32.680	.696382
520.0	.0450	520.0	34.560	.736443
560.0	.0400	560.0	36.260	.772669
600.0	.0360	600.0	37.780	.805059
640.0	.0320	640.0	39.140	.834039
680.0	.0280	680.0	40.340	.859610
720.0	.0240	720.0	41.380	.881772
760.0	.0200	760.0	42.260	.900524
800.0	.0170	800.0	43.000	.916293
840.0	.0140	840.0	43.620	.929504
880.0	.0120	880.0	44.140	.940585
920.0	.0090	920.0	44.560	.949535
960.0	.0080	960.0	44.900	.956780
1000.0	.0060	1000.0	45.180	.962747
1040.0	.0040	1040.0	45.380	.967008
1080.0	.0030	1080.0	45.520	.969992
1120.0	.0020	1120.0	45.620	.972122
1160.0	.0020	1160.0	45.700	.973827
1200.0	.0010	1200.0	45.760	.975106
1240.0	.0010	1240.0	45.800	.975958
1280.0	.0000	1280.0	45.820	.976384

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-19

EVAPORATION EXPERIMENT NO. BLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0520	.0	.000	.000000
15.0	.0490	15.0	.757	.064330
30.0	.0470	30.0	1.477	.125476
45.0	.0440	45.0	2.160	.183437
60.0	.0420	60.0	2.805	.238214
75.0	.0410	75.0	3.427	.291079
90.0	.0390	90.0	4.027	.342034
105.0	.0370	105.0	4.597	.390441
120.0	.0350	120.0	5.137	.436301
135.0	.0340	135.0	5.655	.480249
150.0	.0320	150.0	6.150	.522287
165.0	.0310	165.0	6.622	.562414
180.0	.0290	180.0	7.072	.600630
195.0	.0270	195.0	7.492	.636298
210.0	.0250	210.0	7.882	.669419
225.0	.0230	225.0	8.242	.699992
240.0	.0200	240.0	8.565	.727380
255.0	.0180	255.0	8.850	.751584
270.0	.0160	270.0	9.105	.773240
285.0	.0140	285.0	9.330	.792348
300.0	.0120	300.0	9.525	.808908
315.0	.0100	315.0	9.690	.822921
330.0	.0080	330.0	9.825	.834385
345.0	.0060	345.0	9.930	.843302
360.0	.0040	360.0	10.005	.849672
375.0	.0030	375.0	10.057	.854130
390.0	.0020	390.0	10.095	.857315
405.0	.0020	405.0	10.125	.859863
420.0	.0010	420.0	10.147	.861774
435.0	.0010	435.0	10.162	.863047
450.0	.0000	450.0	10.170	.863684

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-20

EVAPORATION EXPERIMENT NO. BLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 20%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0510	.0	.000	.000000
20.0	.0500	20.0	1.010	.080839
40.0	.0480	40.0	1.990	.159277
60.0	.0460	60.0	2.930	.234514
80.0	.0450	80.0	3.840	.307350
100.0	.0430	100.0	4.720	.377784
120.0	.0400	120.0	5.550	.444216
140.0	.0380	140.0	6.330	.506647
160.0	.0360	160.0	7.070	.565875
180.0	.0340	180.0	7.770	.621903
200.0	.0310	200.0	8.420	.673928
220.0	.0290	220.0	9.020	.721951
240.0	.0260	240.0	9.570	.765973
260.0	.0240	260.0	10.070	.805992
280.0	.0210	280.0	10.520	.842010
300.0	.0180	300.0	10.910	.873225
320.0	.0150	320.0	11.240	.899638
340.0	.0120	340.0	11.510	.921248
360.0	.0090	360.0	11.720	.938056
380.0	.0060	380.0	11.870	.950062
400.0	.0040	400.0	11.970	.958066
420.0	.0030	420.0	12.040	.963669
440.0	.0020	440.0	12.090	.967671
460.0	.0020	460.0	12.130	.970872
480.0	.0010	480.0	12.160	.973274
500.0	.0010	500.0	12.180	.974874
520.0	.0010	520.0	12.200	.976475
540.0	.0010	540.0	12.220	.978076
560.0	.0000	560.0	12.230	.978876

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-21

EVAPORATION EXPERIMENT NO. BLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0790	.0	.000	.000000
30.0	.0720	30.0	2.265	.054741
60.0	.0670	60.0	4.350	.105132
90.0	.0650	90.0	6.330	.152985
120.0	.0630	120.0	8.250	.199388
150.0	.0610	150.0	10.110	.244342
180.0	.0600	180.0	11.925	.288207
210.0	.0580	210.0	13.695	.330985
240.0	.0560	240.0	15.405	.372313
270.0	.0540	270.0	17.055	.412190
300.0	.0520	300.0	18.645	.450618
330.0	.0500	330.0	20.175	.487596
360.0	.0470	360.0	21.630	.522760
390.0	.0440	390.0	22.995	.555750
420.0	.0410	420.0	24.270	.586565
450.0	.0380	450.0	25.455	.615204
480.0	.0350	480.0	26.550	.641668
510.0	.0320	510.0	27.555	.665958
540.0	.0300	540.0	28.485	.688434
570.0	.0270	570.0	29.340	.709098
600.0	.0240	600.0	30.105	.727587
630.0	.0210	630.0	30.780	.743900
660.0	.0180	660.0	31.365	.758039
690.0	.0150	690.0	31.860	.770002
720.0	.0120	720.0	32.265	.779790
750.0	.0100	750.0	32.595	.787766
780.0	.0090	780.0	32.880	.794654
810.0	.0080	810.0	33.135	.800817
840.0	.0070	840.0	33.360	.806254
870.0	.0060	870.0	33.555	.810967
900.0	.0050	900.0	33.720	.814955
930.0	.0030	930.0	33.840	.817855
960.0	.0030	960.0	33.930	.820030
990.0	.0030	990.0	34.020	.822206
1020.0	.0020	1020.0	34.095	.824018
1050.0	.0020	1050.0	34.155	.825468
1080.0	.0010	1080.0	34.200	.826556
1110.0	.0010	1110.0	34.230	.827281
1140.0	.0000	1140.0	34.245	.827643

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-22

EVAPORATION EXPERIMENT NO. BLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0820	.0	.000	.000000
40.0	.0790	40.0	3.220	.072106
80.0	.0770	80.0	6.340	.141972
120.0	.0730	120.0	9.340	.209151
160.0	.0710	160.0	12.220	.273643
200.0	.0680	200.0	15.000	.335896
240.0	.0650	240.0	17.660	.395462
280.0	.0620	280.0	20.200	.452340
320.0	.0590	320.0	22.620	.506532
360.0	.0560	360.0	24.920	.558036
400.0	.0530	400.0	27.100	.606853
440.0	.0490	440.0	29.140	.652534
480.0	.0440	480.0	31.000	.694186
520.0	.0390	520.0	32.660	.731358
560.0	.0350	560.0	34.140	.764500
600.0	.0300	600.0	35.440	.793611
640.0	.0250	640.0	36.540	.818243
680.0	.0200	680.0	37.440	.838397
720.0	.0170	720.0	38.180	.854968
760.0	.0140	760.0	38.800	.868852
800.0	.0120	800.0	39.320	.880496
840.0	.0100	840.0	39.760	.890349
880.0	.0080	880.0	40.120	.898411
920.0	.0070	920.0	40.420	.905128
960.0	.0060	960.0	40.680	.910951
1000.0	.0050	1000.0	40.900	.915877
1040.0	.0040	1040.0	41.080	.919908
1080.0	.0030	1080.0	41.220	.923043
1120.0	.0020	1120.0	41.320	.925282
1160.0	.0020	1160.0	41.400	.927074
1200.0	.0010	1200.0	41.460	.928417
1240.0	.0000	1240.0	41.480	.928865

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-23

EVAPORATION EXPERIMENT NO. BLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0440	.0	.000	.000000
15.0	.0430	15.0	.653	.060451
30.0	.0410	30.0	1.283	.118817
45.0	.0400	45.0	1.890	.175099
60.0	.0390	60.0	2.483	.229992
75.0	.0370	75.0	3.053	.282799
90.0	.0350	90.0	3.592	.332828
105.0	.0340	105.0	4.110	.380772
120.0	.0320	120.0	4.605	.426631
135.0	.0310	135.0	5.077	.470406
150.0	.0300	150.0	5.535	.512791
165.0	.0280	165.0	5.970	.553092
180.0	.0270	180.0	6.382	.591308
195.0	.0250	195.0	6.772	.627439
210.0	.0230	210.0	7.132	.660792
225.0	.0210	225.0	7.462	.691364
240.0	.0190	240.0	7.762	.719158
255.0	.0160	255.0	8.025	.743477
270.0	.0140	270.0	8.250	.764323
285.0	.0130	285.0	8.453	.783083
300.0	.0110	300.0	8.633	.799759
315.0	.0090	315.0	8.783	.813656
330.0	.0080	330.0	8.910	.825468
345.0	.0070	345.0	9.023	.835891
360.0	.0060	360.0	9.120	.844924
375.0	.0050	375.0	9.203	.852567
390.0	.0040	390.0	9.270	.858821
405.0	.0030	405.0	9.323	.863684
420.0	.0030	420.0	9.368	.867854
435.0	.0020	435.0	9.405	.871328
450.0	.0020	450.0	9.435	.874107
465.0	.0010	465.0	9.458	.876192
480.0	.0010	480.0	9.473	.877581
495.0	.0010	495.0	9.488	.878971
510.0	.0000	510.0	9.495	.879666

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

TABLE B-24

EVAPORATION EXPERIMENT NO. BL78 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

OUTPUT VOLTAGE DATA FROM MIRAN IA VAPOR ANALYZER

ANALYZER TIME MINUTES	OUTPUT ABSORBANCE VOLTS	CUMULATIVE DISTRIBUTION FOR TWO SUBSTRATES ELAPSED TIME MINUTES	TOTAL VOLT.MIN	TOTAL NORMALIZED
.0	.0500	.0	.000	.000000
15.0	.0480	15.0	.735	.059113
30.0	.0460	30.0	1.440	.115813
45.0	.0440	45.0	2.115	.170100
60.0	.0420	60.0	2.760	.221975
75.0	.0410	75.0	3.382	.272040
90.0	.0400	90.0	3.990	.320898
105.0	.0380	105.0	4.575	.367947
120.0	.0370	120.0	5.137	.413187
135.0	.0360	135.0	5.685	.457220
150.0	.0350	150.0	6.217	.500046
165.0	.0340	165.0	6.735	.541666
180.0	.0330	180.0	7.237	.582080
195.0	.0320	195.0	7.725	.621288
210.0	.0300	210.0	8.190	.658686
225.0	.0290	225.0	8.632	.694274
240.0	.0270	240.0	9.052	.728053
255.0	.0260	255.0	9.450	.760022
270.0	.0250	270.0	9.832	.790785
285.0	.0210	285.0	10.177	.818532
300.0	.0190	300.0	10.477	.842659
315.0	.0170	315.0	10.748	.864374
330.0	.0150	330.0	10.988	.883676
345.0	.0130	345.0	11.198	.900566
360.0	.0110	360.0	11.378	.915042
375.0	.0090	375.0	11.528	.927106
390.0	.0070	390.0	11.648	.936757
405.0	.0050	405.0	11.738	.943996
420.0	.0040	420.0	11.805	.949424
435.0	.0020	435.0	11.850	.953044
450.0	.0010	450.0	11.873	.954853
465.0	.0010	465.0	11.888	.956060
480.0	.0000	480.0	11.895	.956663

MIRAN VAPOR ANAYZER .25 ABSORBANCE UNITS PER VOLT

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APPENDIX C

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS

TABLE C-1

EVAPORATION EXPERIMENT NO. GLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 45%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	2.208	13861.830	40926.560	498.570	.00150	9.417
30.0	2.001	12562.280	37089.690	451.829	.00136	8.534
60.0	1.742	10937.850	32293.610	393.403	.00118	7.431
90.0	1.587	9963.187	29415.960	358.347	.00108	6.768
120.0	1.449	9096.822	26858.050	327.186	.00098	6.180
150.0	1.328	8338.754	24619.880	299.921	.00090	5.665
180.0	1.173	7364.095	21742.230	264.865	.00080	5.003
210.0	1.087	6822.617	20143.540	245.390	.00074	4.635
240.0	.983	6172.844	18225.110	222.019	.00067	4.194
270.0	.880	5523.071	16306.670	198.649	.00060	3.752
300.0	.794	4981.593	14707.980	179.174	.00054	3.384
330.0	.707	4440.116	13109.290	159.698	.00048	3.016
360.0	.621	3898.[illegible]38	11510.590	140.223	.00042	2.649
390.0	.552	3[illegible].4[illegible]	10231.640	124.642	.00038	2.354
420.0	.483	30[illegible]2.274	8952.685	109.0[illegible]2	.00033	2.060
450.0	.397	2490.797	7353.991	89.587	.00027	1.692
480.0	.328	2057.615	6075.036	74.006	.00022	1.3[illegible]8
510.0	.259	1624.432	4796.081	58.426	.00018	1.[illegible]04
540.0	.207	1299.546	3836.865	46.741	.00014	.883
570.0	.172	1082.955	3197.387	38.951	.00012	.736
600.0	.138	866.364	2557.910	31.161	.00009	.589
630.0	.104	649.773	1918.432	23.370	.00007	.441
660.0	.086	541.477	1598.693	19.475	.00006	.368
690.0	.069	433.182	1278.955	15.580	.00005	.294
720.0	.052	324.887	959.216	11.685	.00004	.221
750.0	.035	216.591	639.477	7.790	.00002	.147
780.0	.035	21[illegible].591	639.477	7.790	.00002	.147
810.0	.017	108.296	319.739	3.895	.00001	.074
840.0	.017	108.296	319.739	3.895	.00001	.074
870.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-2

EVAPORATION EXPERIMENT NO. GLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.949	12237.390	36130.470	413.780	.00132	8.313
30.0	1.811	11371.030	33572.560	384.486	.00123	7.725
60.0	1.673	10504.660	31014.660	355.191	.00114	7.136
90.0	1.553	9746.595	28776.480	329.559	.00105	6.621
120.0	1.449	9096.822	26858.050	307.588	.00098	6.180
150.0	1.363	8555.345	25259.360	289.280	.00093	5.812
180.0	1.259	7905.571	23340.920	267.309	.00086	5.371
210.0	1.173	7364.095	21742.230	249.000	.00080	5.003
240.0	1.104	6930.913	20463.280	234.353	.00075	4.709
270.0	1.018	6389.435	18864.580	216.044	.00069	4.341
300.0	.932	5847.957	17265.890	197.735	.00063	3.973
330.0	.863	5414.775	15986.940	183.088	.00059	3.679
360.0	.794	4981.593	14707.980	168.441	.00054	3.384
390.0	.725	4548.411	13429.030	153.794	.00049	3.090
420.0	.655	4115.229	12150.070	139.147	.00045	2.796
450.0	.587	3682.047	10871.120	124.500	.00040	2.501
480.0	.517	3248.865	9592.161	109.853	.00035	2.207
510.0	.449	2815.683	8313.207	95.206	.00030	1.913
540.0	.380	2382.501	7034.251	80.559	.00026	1.619
570.0	.328	2057.615	6075.036	69.574	.00022	1.398
600.0	.276	1732.728	5115.820	58.588	.00019	1.177
630.0	.224	1407.842	4156.604	47.603	.00015	.956
660.0	.190	1191.250	3517.126	40.2[illegible]	.00013	.809
690.0	.172	1082.955	3197.387	36.618	.00012	.736
720.0	.138	866.364	2557.910	29.294	.00009	.589
750.0	.121	758.069	2238.171	25.632	.00008	.515
780.0	.121	758.069	2238.171	25.632	.00008	.515
810.0	.104	649.773	1918.432	21.971	.00007	.441
840.0	.086	541.477	1598.693	18.309	.00006	.368
870.0	.069	433.182	1278.955	14.647	.00005	.294
900.0	.052	324.887	959.216	10.985	.00004	.221
930.0	.035	216.591	639.477	7.324	.00002	.147
960.0	.017	108.296	319.739	3.662	.00001	.074
990.0	.017	108.296	319.739	3.662	.00001	.074
1020.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-3

EVAPORATION EXPERIMENT NO. GLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.484	9313.413	27497.530	374.[illegible]75	.00101	6.327
15.0	1.294	8122.163	23980.400	326.828	.00088	5.518
30.0	1.138	7147.503	21102.750	287.618	.00077	4.856
45.0	1.018	6389.435	13864.580	257.113	.00069	4.341
60.0	.897	5631.366	16626.4[illegible]	226.608	.00061	3.826
75.0	.794	4981.593	14707.980	200.461	.00054	3.384
90.0	.707	4440.116	13109.290	178.672	.00048	3.016
105.0	.621	3898.638	11510.[illegible]	156.882	.00042	2.649
120.0	.535	3357.160	99[illegible]	135.093	.00036	2.281
135.0	.449	2815.683	8313.207	113.304	.00030	1.913
150.0	.362	2274.206	6714.515	91.515	.00025	1.545
165.0	.310	1949.319	5755.297	78.441	.00021	1.324
180.0	.259	1624.432	4796.081	65.368	.00018	1.104
195.0	.207	1299.546	3836.865	52.294	.00014	.883
210.0	.155	974.659	2877.648	39.221	.00011	.662
225.0	.121	758.069	2238.171	30.505	.00008	.515
240.0	.086	541.477	1598.693	21.789	.00006	.368
255.0	.069	433.182	1278.955	17.431	.00005	.294
270.0	.069	433.182	1278.955	17.431	.00005	.294
285.0	.052	324.887	959.216	13.074	.00004	.221
300.0	.052	324.887	959.216	13.074	.00004	.221
315.0	.035	216.591	639.477	8.716	.00002	.147
330.0	.017	108.295	319.739	4.358	.00001	.074
345.0	.017	108.295	319.739	4.358	.00001	.074
360.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-4

EVAPORATION EXPERIMENT NO. GLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.259	7905.571	23340.920	267.309	.00086	5.371
10.0	1.242	7797.276	23021.190	263.647	.00084	5.297
20.0	1.225	7688.981	22701.450	259.986	.00083	5.223
30.0	1.173	7364.095	21742.230	249.000	.00080	5.003
40.0	1.104	6930.913	20463.280	234.353	.00075	4.709
50.0	1.035	6497.730	19184.320	219.706	.00070	4.414
60.0	1.000	6281.139	18544.840	212.382	.00068	4.267
70.0	.949	5956.252	17585.630	201.397	.00064	4.046
80.0	.897	5631.366	16626.410	190.412	.00061	3.826
90.0	.845	5306.479	15667.200	179.427	.00057	3.605
100.0	.811	5089.838	15027.720	172.103	.00055	3.458
110.0	.759	4765.002	14068.500	161.118	.00052	3.237
120.0	.707	4440.116	13109.290	150.132	.00048	3.016
130.0	.673	4223.524	12469.810	142.809	.00046	2.869
140.0	.638	4006.933	11830.330	135.485	.00043	2.722
150.0	.587	3682.047	10871.120	124.500	.00040	2.501
160.0	.552	3465.456	10231.640	117.177	.00038	2.354
170.0	.517	3248.865	9592.161	109.853	.00035	2.207
180.0	.483	3032.274	8952.685	102.529	.00033	2.060
190.0	.449	2815.683	8313.207	95.206	.00030	1.913
200.0	.414	2599.092	7673.729	87.882	.00028	1.766
210.0	.380	2382.501	7034.251	80.559	.00026	1.619
220.0	.345	2165.910	6394.774	73.235	.00023	1.471
230.0	.310	1949.319	5755.297	65.912	.00021	1.324
240.0	.276	1732.728	5115.820	58.588	.00019	1.177
250.0	.242	1516.137	4476.342	51.265	.00016	1.030
260.0	.224	1407.842	4156.604	47.603	.00015	.956
270.0	.190	1191.250	3517.126	40.279	.00013	.809
280.0	.155	974.659	2877.648	32.956	.00011	.662
290.0	.138	866.364	2557.910	29.294	.00009	.589
300.0	.121	758.069	2238.171	25.632	.00008	.515
310.0	.104	649.773	1918.432	21.971	.00007	.441
320.0	.086	541.477	1598.693	18.309	.00006	.368
330.0	.069	433.182	1278.955	14.647	.00005	.295
340.0	.035	216.591	639.477	7.324	.00002	.147
350.0	.035	216.591	639.477	7.324	.00002	.147
360.0	.017	108.296	319.739	3.662	.00001	.074
370.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-5

EVAPORATION EXPERIMENT NO. uLF5 SERIES 1D 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 58%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.345	8447.049	24939.620	339.912	.00091	5.738
30.0	1.276	8013.867	23660.660	322.480	.00087	5.444
60.0	1.225	7688.981	22701.450	309.407	.00083	5.223
90.0	1.156	7255.799	21422.490	291.976	.00079	4.929
120.0	1.087	6822.617	20143.540	274.544	.00074	4.635
150.0	1.035	6497.730	19184.320	261.471	.00073	4.414
180.0	.966	6064.548	17905.370	244.039	.00066	4.120
210.0	.914	5739.662	16946.150	230.966	.00062	3.899
240.0	.863	5414.775	15986.940	217.892	.00059	3.679
270.0	.811	5089.888	15027.720	204.819	.00055	3.458
300.0	.759	4765.002	14068.500	191.745	.00052	3.237
330.0	.690	4331.820	12789.550	174.314	.00047	2.943
360.0	.621	3898.638	11510.590	156.882	.00042	2.649
390.0	.569	3573.751	10551.380	143.809	.00039	2.428
420.0	.517	3248.865	9592.161	130.735	.00035	2.207
450.0	.483	3032.274	8952.685	122.020	.00033	2.060
480.0	.431	2707.387	7993.468	108.946	.00029	1.839
510.0	.397	2490.797	7353.991	100.230	.00027	1.692
540.0	.362	2274.206	6714.513	91.515	.00025	1.545
570.0	.310	1949.319	5755.297	78.441	.00021	1.324
600.0	.276	1732.728	5115.820	69.726	.00019	1.177
630.0	.224	1407.842	4156.604	56.652	.00015	.956
660.0	.190	1191.250	3517.126	47.936	.00013	.809
690.0	.138	866.364	2557.910	34.863	.00009	.589
720.0	.104	649.773	1918.432	26.147	.00007	.441
750.0	.069	433.182	1278.955	17.431	.00005	.294
780.0	.052	324.887	959.216	13.074	.00004	.221
810.0	.035	216.591	639.477	8.716	.00002	.147
840.0	.017	108.296	319.739	4.358	.00001	.074
870.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-6

EVAPORATION EXPERIMENT NO. GLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.311	8230.457	24300.140	296.026	.00089	5.591
30.0	1.276	8013.866	23660.660	288.236	.00087	5.444
60.0	1.225	7688.980	22701.450	276.550	.00083	5.223
90.0	1.207	7580.684	22381.710	272.655	.00082	5.150
120.0	1.138	7147.502	21102.750	257.075	.00077	4.856
150.0	1.104	6930.912	20463.280	249.285	.00075	4.708
180.0	1.069	6714.320	19823.800	241.495	.00073	4.561
210.0	1.018	6389.434	18864.580	229.810	.00069	4.341
240.0	.966	6064.547	17905.370	218.124	.00066	4.120
270.0	.914	5739.661	16946.150	206.439	.00062	3.899
300.0	.862	5414.774	15986.930	194.754	.00059	3.679
330.0	.811	5089.883	15027.720	183.069	.00055	3.458
360.0	.759	4765.001	14068.500	171.383	.00052	3.237
390.0	.707	4440.115	13109.290	159.698	.00048	3.016
420.0	.655	4115.229	12150.070	148.013	.00045	2.796
450.0	.604	3790.342	11190.850	136.328	.00041	2.575
480.0	.552	3465.456	10231.640	124.64[illegible]	.00038	2.354
510.0	.500	3140.569	9272.422	112.957	.00034	2.134
540.0	.448	2815.683	8313.205	101.272	.00030	1.913
570.0	.397	2490.796	7353.989	89.587	.00027	1.692
600.0	.345	2165.910	6394.774	77.902	.00023	471
630.0	.293	1841.023	5435.558	66.216	.00020	1.251
660.0	.241	1516.137	4476.341	54.531	.00016	1.030
690.0	.190	1191.250	3517.125	42.846	.00013	.809
720.0	.138	866.364	2557.909	31.161	.00009	.589
750.0	.103	649.773	1918.432	23.370	.00007	.441
780.0	.086	541.477	1598.693	19.475	.00006	.368
810.0	.052	324.886	959.216	11.685	.00004	.221
840.0	.034	216.591	639.477	7.790	.00002	.147
870.0	.017	108.295	319.739	3.895	.00001	.074
900.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-7

EVAPORATION EXPERIMENT NO. GLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	.816	5122.848	15125.030	188.252	.00055	3.480
15.0	.765	4802.670	14179.720	176.486	.00052	3.263
30.0	.731	4589.218	13549.510	168.643	.00050	3.118
45.0	.714	4482.492	13234.400	164.721	.00049	3.045
60.0	.680	4269.040	12604.190	156.877	.00046	2.900
75.0	.646	4055.588	11973.980	149.033	.00044	2.755
90.0	.629	3948.862	11658.880	145.111	.00043	2.683
105.0	.595	3735.410	11028.670	137.267	.00040	2.538
120.0	.578	3628.684	10713.560	133.345	.00039	2.465
135.0	.544	3415.232	10083.350	125.501	.00037	2.320
150.0	.527	3308.506	9768.250	121.580	.00036	2.248
165.0	.493	3095.054	9138.039	113.736	.00033	2.103
180.0	.459	2881.602	8507.830	105.892	.00031	1.958
195.0	.442	2774.876	8192.726	101.970	.00030	1.885
210.0	.408	2561.424	7562.516	94.126	.00028	1.740
225.0	.374	2347.972	6932.307	86.282	.00025	1.595
240.0	.340	2134.520	6302.096	78.438	.00023	1.450
255.0	.306	1921.068	5671.887	70.595	.00021	1.305
270.0	.272	1707.616	5041.677	62.751	.00018	1.160
285.0	.238	1494.164	4411.468	54.907	.00016	1.015
300.0	.221	1387.438	4096.363	50.985	.00015	.943
315.0	.187	1173.986	3466.153	43.141	.00013	.798
330.0	.153	960.534	2835.943	35.297	.00010	.653
345.0	.119	747.082	2205.734	27.453	.00008	.508
360.0	.102	640.356	1890.629	23.532	.00007	.435
375.0	.085	533.630	1575.524	19.610	.00006	.363
390.0	.068	426.904	1260.419	15.688	.00005	.290
405.0	.051	320.178	945.314	11.766	.00003	.218
420.0	.034	213.452	630.210	[illegible].844	.00002	.145
435.0	.034	213.452	630.210	7.844	.00002	.145
450.0	.017	106.726	315.105	3.922	.00001	.073
465.0	.017	106.726	315.105	3.922	.00001	.073
480.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-8

EVAPORATION EXPERIMENT NO. GLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	.799	5014.553	14805.290	169.556	.00054	3.407
15.0	.763	4791.684	14147.280	162.020	.00052	3.255
30.0	.745	4680.249	13818.270	158.252	.00051	3.180
45.0	.728	4568.814	13489.270	154.484	.00049	3.104
60.0	.692	4345.946	12831.250	146.948	.00047	2.952
75.0	.674	4234.511	12502.250	143.180	.00046	2.877
90.0	.639	4011.642	11844.230	135.645	.00043	2.725
105.0	.621	3900.207	11515.230	131.877	.00042	2.650
120.0	.604	3788.773	11186.220	128.109	.00041	2.574
135.0	.568	3565.904	10528.210	120.573	.00039	2.422
150.0	.550	3454.469	10199.200	116.805	.00037	2.347
165.0	.515	3231.601	9541.188	109.269	.00035	2.195
180.0	.497	3120.166	9212.182	105.501	.00034	2.120
195.0	.462	2897.297	8554.169	97.966	.00031	1.968
210.0	.444	2785.863	8225.163	94.198	.00030	1.893
225.0	.408	2562.993	7567.149	86.662	.00028	1.741
240.0	.391	2451.559	7238.143	82.894	.00027	1.665
255.0	.355	2228.690	6580.130	75.358	.00024	1.514
270.0	.337	2117.255	6251.123	71.590	.00023	1.438
285.0	.302	1894.386	5593.110	64.054	.00020	1.287
300.0	.284	1782.952	5264.104	60.286	.00019	1.211
315.0	.249	1560.083	4606.091	52.751	.00017	1.060
330.0	.231	1448.649	4277.084	48.983	.00016	.984
345.0	.195	1225.780	3619.072	41.447	.00013	.833
360.0	.160	1002.911	2961.059	33.911	.00011	.681
375.0	.142	891.476	2632.052	30.143	.00010	.606
390.0	.106	668.607	1974.039	22.607	.00007	.454
405.0	.089	557.172	1645.032	18.840	.00006	.379
420.0	.053	334.303	987.019	11.304	.00004	.227
435.0	.036	222.869	658.013	7.536	.00002	.151
450.0	.018	111.435	329.007	3.768	.00001	.076
465.0	.018	111.435	329.007	3.768	.00001	.076
480.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-9

EVAPORATION EXPERIMENT NO. GLF9 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	2.397	15048.370	44429.780	652.031	.00163	10.223
30.0	1.530	9605.341	28359.440	416.190	.00104	6.525
60.0	1.428	8964.983	26468.800	388.444	.00097	6.090
90.0	1.394	8751.532	25838.600	379.195	.00095	5.945
120.0	1.275	8004.451	23632.860	346.825	.00087	5.438
150.0	1.190	7470.820	22057.340	323.703	.00081	5.075
180.0	1.122	7043.916	20796.920	305.206	.00076	4.785
210.0	1.037	6510.287	19221.400	282.084	.00070	4.423
240.0	.969	6083.382	17960.970	263.587	.00066	4.133
270.0	.884	5549.752	16385.450	240.465	.00060	3.770
300.0	.816	5122.848	15125.030	221.968	.00055	3.480
330.0	.731	4589.218	13549.510	198.846	.00050	3.118
360.0	.663	4162.314	12289.090	180.349	.00045	2.828
390.0	.578	3628.684	10713.560	157.227	.00039	2.465
420.0	.510	3201.780	9453.145	138.730	.00035	2.175
450.0	.425	2668.150	7877.621	115.608	.00029	1.813
480.0	.357	2241.246	6617.201	97.111	.00024	1.523
510.0	.289	1814.342	5356.782	78.614	.00020	1.233
540.0	.238	1494.164	4411.468	64.741	.00016	1.015
570.0	.187	1173.986	3466.153	50.868	.00013	.798
600.0	.136	853.808	2520.839	36.995	.00009	.580
630.0	.102	640.356	1890.629	27.746	.00007	.435
660.0	.068	426.904	1260.419	18.497	.00005	.290
690.0	.051	320.178	945.314	13.873	.00003	.218
720.0	.034	213.452	630.210	9.249	.00002	.145
750.0	.017	106.726	315.105	4.624	.00001	.073
780.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-10

EVAPORATION EXPERIMENT NO. GLF10 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 52%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	2.329	14619.890	43164.730	494.339	.00158	9.932
30.0	1.673	10504.670	31014.660	355.191	.00114	7.136
60.0	1.570	9854.892	29096.230	333.221	.00107	6.695
90.0	1.484	9313.414	27497.530	314.912	.00101	6.327
120.0	1.432	8988.527	26538.320	303.927	.00097	6.106
150.0	1.363	8555.346	25259.360	289.280	.00093	5.812
180.0	1.294	8122.164	23980.410	274.633	.00088	5.518
210.0	1.242	7797.277	23021.190	263.647	.00084	5.297
240.0	1.173	7364.095	21742.240	249.000	.00080	5.003
270.0	1.121	7039.208	20783.020	238.015	.00076	4.782
300.0	1.035	6497.730	19184.320	219.706	.00070	4.414
330.0	.983	6172.844	18225.110	208.721	.00067	4.194
360.0	.914	5739.662	16946.150	194.074	.00062	3.899
390.0	.845	5306.480	15667.200	179.427	.00057	3.605
420.0	.776	4873.298	14388.240	164.780	.00053	3.311
450.0	.690	4331.820	12789.550	146.471	.00047	2.943
480.0	.604	3790.343	11190.860	128.162	.00041	2.575
510.0	.535	3357.161	9911.901	113.515	.00036	2.281
540.0	.466	2923.979	8632.946	98.868	.00032	1.986
570.0	.397	2490.797	7353.991	84.221	.00027	1.692
600.0	.345	2165.910	6394.775	73.235	.00023	1.471
630.0	.276	1732.728	5115.820	58.588	.00019	1.177
660.0	.242	1516.137	4476.343	51.265	.00016	1.030
690.0	.207	1299.546	3836.865	43.941	.00014	.883
720.0	.173	1082.955	3197.387	36.618	.00012	.736
750.0	.138	866.364	2557.910	29.294	.00009	.589
780.0	.104	649.773	1918.432	21.971	.00007	.441
810.0	.086	541.478	1598.694	18.309	.00006	.368
840.0	.069	433.182	1278.955	14.647	.00005	.294
870.0	.052	324.887	959.216	10.985	.00004	.221
900.0	.017	108.296	319.739	3.662	.00001	.074
930.0	.017	108.296	319.739	3.662	.00001	.074
960.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-11

EVAPORATION EXPERIMENT NO. G'F11 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.137	7141.225	21084.220	280.695	.00077	4.851
10.0	1.085	6811.630	20111.100	267.740	.00074	4.627
20.0	.033	6482.035	19137.980	254.785	.00070	4.404
30.0	.998	6262.305	18489.240	246.148	.00068	4.254
40.0	.945	5932.710	17516.120	233.193	.00064	4.030
50.0	.910	5712.980	16867.380	224.556	.00062	3.881
60.0	.857	5383.385	15894.260	211.601	.00058	3.657
70.0	.822	5163.655	15245.510	202.964	.00056	3.508
80.0	.788	4943.925	14596.770	194.327	.00053	3.359
90.0	.752	4724.195	13948.020	185.691	.00051	3.209
100.0	.700	4394.600	12974.900	172.736	.00048	2.985
110.0	.665	4174.870	12326.160	164.099	.00045	2.836
120.0	.613	3845.275	11353.040	151.144	.00042	2.612
130.0	.577	3625.545	10704.300	142.507	.00039	2.463
140.0	.543	3405.815	10055.550	133.870	.00037	2.314
150.0	.490	3076.220	9082.433	120.915	.00033	2.090
160.0	.455	2856.490	8433.688	112.278	.00031	1.941
170.0	.420	2636.760	7784.942	103.641	.00029	1.791
180.0	.385	2417.030	7136.197	95.005	.00026	1.642
190.0	.332	2087.435	6163.079	82.049	.00023	1.418
200.0	.298	1867.705	5514.334	73.413	.00020	1.269
210.0	.262	1647.975	4865.589	64.776	.00018	1.120
220.0	.228	1428.245	4216.844	56.139	.00015	.970
230.0	.210	1318.380	3892.471	51.821	.00014	.896
240.0	.175	1098.650	3243.726	43.184	.00012	.746
250.0	.157	988.785	2919.353	38.865	.00011	.672
260.0	.140	878.920	2594.981	34.547	.00010	.597
270.0	.123	769.055	2270.608	30.229	.00008	.522
280.0	.105	659.190	1946.236	25.910	.00007	.448
290.0	.087	549.325	1621.863	21.592	.00006	.373
300.0	.070	439.460	1297.490	17.274	.00005	.299
310.0	.053	329.595	973.118	12.955	.00004	.224
320.0	.053	329.595	973.118	12.955	.00004	.224
330.0	.035	219.730	648.745	8.637	.00002	.149
340.0	.018	109.865	324.373	4.318	.00001	.075
350.0	.018	109.865	324.373	4.318	.00001	.075
360.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-12

EVAPORATION EXPERIMENT NO. GLF12 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	.932	5847.957	17265.890	197.735	.00063	3.973
10.0	.897	5631.366	16626.410	190.412	.00061	3.826
20.0	.880	5523.071	16306.670	186.750	.00060	3.752
30.0	.845	5306.479	15667.200	179.427	.00057	3.605
40.0	.811	5089.888	15027.720	172.103	.00055	3.458
50.0	.794	4981.593	14707.980	168.441	.00054	3.384
60.0	.776	4873.297	14388.240	164.780	.00053	3.311
70.0	.742	4656.707	13748.760	157.456	.00050	3.164
80.0	.725	4548.411	13429.030	153.794	.00049	3.090
90.0	.707	4440.116	13109.290	150.132	.00048	3.016
100.0	.690	4331.820	12789.550	146.471	.00047	2.943
110.0	.673	4223.524	12469.810	142.809	.00046	2.869
120.0	.655	4115.229	12150.070	139.147	.00045	2.796
130.0	.621	3898.638	11510.590	131.824	.00042	2.649
140.0	.604	3790.343	11190.850	128.162	.00041	2.575
150.0	.587	3682.047	10871.120	124.500	.00040	2.501
160.0	.569	3573.751	10551.380	120.838	.00039	2.428
170.0	.552	3465.456	10231.640	117.177	.00038	2.354
180.0	.517	3248.865	9592.161	109.853	.00035	2.207
190.0	.500	3140.569	9272.422	106.191	.00034	2.134
200.0	.483	3032.274	8952.685	102.529	.00033	2.060
210.0	.466	2923.979	8632.945	98.868	.00032	1.986
220.0	.431	2707.387	7993.468	91.544	.00029	1.839
230.0	.414	2599.092	7673.729	87.882	.00028	1.766
240.0	.380	2382.501	7034.251	80.559	.00026	1.619
250.0	.362	2274.206	6714.513	76.897	.00025	1.545
260.0	.328	2057.615	6075.036	69.574	.00022	1.398
270.0	.310	1949.319	5755.297	65.912	.00021	1.324
280.0	.293	1841.024	5435.559	62.250	.00020	1.251
290.0	.259	1624.432	4796.081	54.927	.00018	1.104
300.0	.242	1516.137	4476.342	51.265	.00016	1.030
310.0	.207	1299.546	3836.865	43.941	.00014	.883
320.0	.172	1082.955	3197.387	36.618	.00012	.736
330.0	.155	974.659	2877.648	32.956	.00011	.662
340.0	.138	866.364	2557.910	29.294	.00009	.589
350.0	.104	649.777	1918.432	21.971	.00007	.441
360.0	.086	541.477	1598.693	18.309	.00006	.368
370.0	.052	324.887	959.216	10.985	.00004	.221
380.0	.035	216.591	639.477	7.324	.00002	.147
390.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-13

EVAPORATION EXPERIMENT NO. GLF13 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.190	7470.821	22057.340	307.945	.00081	5.075
40.0	1.071	6723.739	19851.610	277.151	.00073	4.568
80.0	1.020	6403.561	18906.290	263.953	.00069	4.350
120.0	.986	6190.108	18276.080	255.155	.00067	4.205
160.0	.935	5869.931	17330.770	241.957	.00064	3.988
200.0	.901	5656.479	16700.560	233.159	.00061	3.843
240.0	.867	5443.027	16070.350	224.360	.00059	3.698
280.0	.833	5229.574	15440.140	215.562	.00057	3.553
320.0	.799	5016.123	14809.[illegible]0	206.763	.00054	3.408
360.0	.765	4802.671	14179.720	197.965	.00052	3.263
400.0	.697	4375.767	12919.300	180.368	.00047	2.973
440.0	.663	4162.314	12289.090	171.570	.00045	2.828
480.0	.612	3842.136	11343.770	158.372	.00042	2.610
520.0	.561	3521.958	10398.460	145.174	.00038	2.393
560.0	.493	3095.054	9138.040	127.577	.00033	2.103
600.0	.425	2668.150	7877.621	109.980	.00029	1.813
640.0	.357	2241.246	6617.201	92.384	.00024	1.523
680.0	.306	1921.068	5671.887	79.186	.00021	1.305
720.0	.255	1600.890	4726.573	65.988	.00017	1.088
760.0	.204	1280.712	3781.258	52.791	.00014	.870
800.0	.170	1067.260	3151.049	43.992	.00012	.725
840.0	.136	853.808	2520.839	35.194	.00009	.580
880.0	.119	747.082	2205.734	30.795	.00008	.508
920.0	.102	640.356	1890.629	26.395	.00007	.435
960.0	.085	533.630	1575.524	21.996	.00006	.363
1000.0	.068	426.904	1260.420	17.597	.00005	.290
1040.0	.051	320.178	945.315	13.198	.00003	.218
1080.0	.034	213.452	630.210	8.798	.00002	.145
1120.0	.034	213.452	630.210	8.798	.00002	.145
1160.0	.034	213.452	630.210	8.798	.00002	.145
1200.0	.017	106.726	315.105	4.399	.00001	.073
1240.0	.017	106.726	315.105	4.399	.00001	.073
1280.0	.000	.000	.000	.000	.00000	.000

* MICPOGRAMS PER CUBIC METER

TABLE C-14

EVAPORATION EXPERIMENT NO. GLF14 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 43%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.225	7690.550	22706.080	260.039	.00083	5.225
40.0	1.173	7360.955	21732.960	248.894	.00080	5.001
80.0	1.120	7031.360	20759.850	237.750	.00076	4.777
120.0	1.085	6811.630	20111.100	230.320	.00074	4.627
160.0	1.050	6591.900	19462.360	222.890	.00071	4.478
200.0	1.015	6372.170	18813.610	215.461	.00069	4.329
240.0	.962	6042.575	17840.490	204.316	.00065	4.105
280.0	.928	5822.845	17191.750	196.886	.00063	3.956
320.0	.892	5603.115	16543.000	189.437	.00061	3.806
360.0	.857	5383.385	15894.260	182.027	.00058	3.657
400.0	.805	5053.790	14921.140	170.882	.00055	3.433
440.0	.770	4834.060	14272.390	163.453	.00052	3.284
480.0	.718	4504.465	13299.280	152.308	.00049	3.060
520.0	.665	4174.870	12326.160	141.164	.00045	2.836
560.0	.612	3845.275	11353.040	130.019	.00042	2.612
600.0	.560	3515.680	10379.920	118.875	.00038	2.388
640.0	.507	3186.085	9406.806	107.730	.00034	2.164
680.0	.438	2746.625	8109.315	92.871	.00030	1.866
720.0	.385	2417.030	7136.197	81.726	.00026	1.642
760.0	.350	2197.300	6487.452	74.297	.00024	1.493
800.0	.298	1867.705	5514.334	63.152	.00020	1.269
840.0	.262	1647.975	4865.589	55.723	.00018	1.120
880.0	.228	1428.245	4216.844	48.293	.00015	.970
920.0	.157	988.785	2919.353	33.434	.00011	.672
960.0	.105	659.190	1946.236	22.289	.00007	.448
1000.0	.087	549.325	1621.863	18.574	.00006	.373
1040.0	.087	549.325	1621.863	18.574	.00006	.373
1080.0	.053	329.595	973.118	11.145	.00004	.224
1120.0	.035	219.730	648.745	7.430	.00002	.149
1160.0	.000	.000	000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-15

EVAPORATION EXPERIMENT NO. GLF15 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	.720	4521.729	13350.250	177.733	.00049	3.072
15.0	.687	4311.417	12729.310	169.466	.00047	2.929
30.0	.653	4101.104	12108.370	161.199	.00044	2.786
45.0	.637	3995.947	11797.900	157.066	.00043	2.715
60.0	.603	3785.634	11176.950	148.799	.00041	2.572
75.0	.586	3680.478	10866.480	144.666	.00040	2.500
90.0	.570	3575.321	10556.010	140.533	.00039	2.429
105.0	.553	3470.165	10245.540	136.399	.00038	2.357
120.0	.519	3259.851	9624.598	128.133	.00035	2.215
135.0	.502	3154.695	9314.128	123.999	.00034	2.143
150.0	.486	3049.538	9003.656	119.866	.00033	2.072
165.0	.452	2839.226	8382.715	111.600	.00031	1.929
180.0	.435	2734.069	8072.244	107.466	.00030	1.857
195.0	.419	2628.913	7761.773	103.333	.00028	1.786
210.0	.402	2523.756	7451.302	99.200	.00027	1.715
225.0	.368	2313.443	6830.360	90.933	.00025	1.572
240.0	.335	2103.130	6209.418	82.666	.00023	1.429
255.0	.301	1892.817	5588.476	74.400	.00020	1.286
270.0	.268	1682.504	4967.535	66.133	.00018	1.143
285.0	.235	1472.191	4346.593	57.866	.00016	1.000
300.0	.201	1261.878	3725.651	49.600	.00014	.857
315.0	.167	1051.565	3104.709	41.333	.00011	.714
330.0	.134	841.252	2483.767	33.067	.00009	.572
345.0	.101	630.939	1862.826	24.800	.00007	.429
360.0	.084	525.782	1552.354	20.667	.00006	.357
375.0	.067	420.626	1241.884	16.533	.00005	.286
390.0	.050	315.470	931.413	12.400	.00003	.214
405.0	.034	210.313	620.942	8.267	.00002	.143
420.0	.017	105.157	310.471	4.133	.00001	.071
435.0	.017	105.157	310.471	4.133	.00001	.071
450.0	.017	105.157	310.471	4.133	.00001	.071
465.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-16

EVAPORATION EXPERIMENT NO. GLF16 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS ? MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MASS BALANCE)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	.731	4589.218	13549.510	161.628	.00050	3.118
15.0	.697	4375.766	12919.300	154.111	.00047	2.973
30.0	.663	4162.314	12289.090	146.593	.00045	2.828
45.0	.646	4055.583	11973.980	142.834	.00044	2.755
60.0	.612	3842.136	11343.770	135.317	.00042	2.610
75.0	.595	3735.410	11028.670	131.558	.00040	2.538
90.0	.578	3628.684	10713.560	127.799	.00039	2.465
105.0	.561	3521.958	10398.460	124.040	.00038	2.393
120.0	.544	3415.232	10083.350	120.281	.00037	2.320
135.0	.527	3308.506	9768.250	116.523	.00036	2.248
150.0	.510	3201.780	9453.145	112.764	.00035	2.175
165.0	.476	2988.328	8822.936	105.246	.00032	2.030
180.0	.476	2988.328	8822.936	105.246	.00032	2.030
195.0	.442	2774.876	8192.726	97.729	.00030	1.885
210.0	.425	2668.150	7877.621	93.970	.00029	1.813
225.0	.408	2561.424	7562.516	90.211	.00028	1.740
240.0	.374	2347.972	6932.307	82.694	.00025	1.595
255.0	.357	2241.246	6617.201	78.935	.00024	1.523
270.0	.340	2134.520	6302.096	75.176	.00023	1.450
285.0	.306	1921.068	5671.887	67.658	.00021	1.305
300.0	.272	1707.616	5041.677	60.141	.00018	1.160
315.0	.238	1494.164	4411.468	52.623	.00016	1.015
330.0	.204	1280.712	3781.258	45.106	.00014	.870
345.0	.153	960.534	2835.943	33.829	.00010	.653
360.0	.119	747.082	2205.734	26.312	.00008	.508
375.0	.085	533.630	1575.524	18.794	.00006	.363
390.0	.051	320.178	945.314	11.276	.00003	.218
405.0	.034	213.452	630.210	7.518	.00002	.145
420.0	.017	106.726	315.105	3.759	.00001	.073
435.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-17

EVAPORATION EXPERIMENT NO. RLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQU	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.345	8447.049	24939.620	297.498	.00091	5.738
45.0	1.259	7905.571	23340.920	278.427	.00086	5.371
90.0	1.190	7472.389	22061.970	263.171	.00081	5.076
135.0	1.138	7147.503	21102.750	251.729	.00077	4.856
180.0	1.087	6822.617	20143.560	240.287	.00074	4.635
225.0	1.035	6497.730	19184.320	228.844	.00070	4.414
270.0	.966	6064.548	17905.370	213.588	.00066	4.120
315.0	.914	5739.662	16946.150	202.146	.00062	3.899
360.0	.828	5198.184	15347.460	183.075	.00056	3.531
405.0	.759	4765.002	14068.500	167.819	.00052	3.237
450.0	.673	4223.524	12469.810	148.749	.00046	2.869
495.0	.604	3790.343	11190.850	133.493	.00041	2.575
540.0	.517	3248.865	9592.161	114.422	.00035	2.207
585.0	.431	2707.387	7993.468	95.352	.00029	1.839
630.0	.362	2274.206	6714.513	80.096	.00025	1.545
675.0	.276	1732.728	5115.820	61.025	.00019	1.177
720.0	.224	1407.842	4156.604	9.583	.00015	.956
765.0	.155	974.659	2877.648	[illegible].327	.00011	.662
810.0	.121	758.069	2238.171	26.699	.00008	.515
855.0	.069	433.182	1278.955	15.256	.00005	.294
900.0	.052	324.887	959.216	11.442	.00004	.221
945.0	.035	216.591	639.477	7.628	.00002	.147
990.0	.035	216.591	639.477	7.628	.00002	.147
1035.0	.017	108.296	319.739	3.314	.00001	.074
1080.0	.017	108.296	319.739	3.814	.00001	.074
1125.0	.017	108.296	319.739	3.814	.00001	.074
1170.0	.017	108.296	319.739	3.814	.00001	.074
1215.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-28

EVAPORATION EXPERIMENT NO. BLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.491	9358.929	27631.910	316.451	.00101	6.358
40.0	1.407	8833.146	26079.560	298.673	.00096	6.001
80.0	1.340	8412.520	24837.670	284.450	.00091	5.715
120.0	1.290	8097.050	23906.260	273.783	.00088	5.501
160.0	1.240	7781.581	22974.850	263.117	.00084	5.286
200.0	1.189	7466.111	22043.440	252.450	.00081	5.072
240.0	1.139	7150.643	21112.020	241.783	.00077	4.858
280.0	1.089	6835.172	20180.610	231.116	.00074	4.643
320.0	1.038	6519.703	19249.200	220.449	.00071	4.429
360.0	.988	6204.233	18317.780	209.782	.00067	4.215
400.0	.938	5888.764	17386.370	199.115	.00064	4.001
440.0	.871	5468.138	16144.490	184.893	.00059	3.715
480.0	.821	5152.668	15213.080	174.226	.00056	3.500
520.0	.754	4732.042	13971.190	160.003	.00051	3.215
560.0	.670	4206.260	12418.840	142.225	.00046	2.858
600.0	.603	3785.634	11176.950	128.003	.00041	2.572
640.0	.536	3365.008	9935.069	113.780	.00036	2.286
680.0	.469	2944.382	8693.187	99.558	.00032	2.000
720.0	.402	2523.756	7451.302	85.335	.00027	1.715
760.0	.335	2103.130	6209.418	71.113	.00023	1.429
800.0	.285	1787.661	5278.066	60.446	.00019	1.214
840.0	.235	1472.191	4346.593	49.779	.00016	1.000
880.0	.201	1261.878	3725.651	42.668	.00014	.857
920.0	.151	946.408	2794.238	32.001	.00010	.643
960.0	.134	841.252	2483.767	28.445	.00009	.572
1000.0	.101	630.939	1862.826	21.334	.00007	.429
1040.0	.067	420.626	1241.884	14.223	.00005	.286
1080.0	.050	315.470	931.413	10.667	.00003	.214
1120.0	.034	210.313	620.942	7.111	.00002	.143
1160.0	.034	210.313	620.942	7.111	.00002	.143
1200.0	.017	105.157	310.471	3.556	.00001	.071
1240.0	.017	105.157	310.471	3.556	.00001	.071
1280.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-19

EVAPORATION EXPERIMENT NO. BLF3 SERIES IN 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPS, AIR TEMPERATURE 50 DEG F., RELATIVE HUMIDITY 37%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	.897	5631.366	16626.410	198.332	.00061	3.826
15.0	.845	5306.479	15667.200	186.890	.00057	3.605
30.0	.811	5089.888	15027.720	179.261	.00055	3.458
45.0	.759	4765.002	14068.500	167.819	.00052	3.237
60.0	.725	4548.411	13429.030	160.191	.00049	3.090
75.0	.707	4440.116	13109.290	156.377	.00048	3.016
90.0	.673	4223.524	12469.810	148.749	.00046	2.869
105.0	.638	4006.933	11830.330	141.121	.00043	2.722
120.0	.604	3790.343	11190.850	133.493	.00041	2.575
135.0	.587	3682.047	10871.120	129.678	.00040	2.501
150.0	.552	3465.456	10231.640	122.050	.00038	2.354
165.0	.535	3357.160	9911.899	118.236	.00036	2.281
180.0	.500	3140.569	9272.422	110.608	.00034	2.134
195.0	.466	2923.979	8632.945	102.980	.00032	1.986
210.0	.431	2707.387	7993.460	95.352	.00029	1.839
225.0	.397	2490.797	7353.991	87.724	.00027	1.692
240.0	.345	2165.910	6394.774	76.281	.00023	1.471
255.0	.310	1949.319	5755.297	68.653	.00021	1.324
270.0	.276	1732.728	5115.820	61.025	.00019	1.177
285.0	.242	1516.137	4476.342	53.397	.00016	1.030
300.0	.207	1299.546	3836.865	45.769	.00014	.883
315.0	.172	1082.955	3197.387	38.141	.00012	.736
330.0	.138	866.364	2557.910	30.513	.00009	.589
345.0	.104	649.773	1918.432	22.884	.00007	.441
360.0	.069	433.182	1278.955	15.256	.00005	.294
375.0	.052	324.887	959.216	11.442	.00004	.221
390.0	.035	216.591	639.477	7.628	.00002	.147
405.0	.035	216.591	639.477	7.628	.00002	.147
420.0	.017	108.296	319.739	3.814	.00001	.074
435.0	.017	108.296	319.739	3.814	.00001	.074
450.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-20

EVAPORATION EXPERIMENT NO. BLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 20%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	.880	5523.071	16306.670	179.579	.00060	3.752
20.0	.863	5414.775	15986.940	176.058	.00059	3.679
40.0	.828	5198.184	15347.460	169.016	.00056	3.531
60.0	.794	4931.593	14707.980	161.973	.00054	3.384
80.0	.776	4873.297	14388.240	158.452	.00053	3.311
100.0	.742	4656.707	13748.760	151.410	.00050	3.164
120.0	.690	4331.820	12789.550	140.846	.00047	2.943
140.0	.655	4115.229	12150.070	133.804	.00045	2.796
160.0	.621	3898.638	11510.590	126.762	.00042	2.649
180.0	.587	3682.047	10871.120	119.719	.00040	2.501
200.0	.535	3357.160	9911.899	109.156	.00036	2.281
220.0	.500	3140.569	9272.422	102.114	.00034	2.134
240.0	.449	2815.683	8313.207	91.550	.00030	1.913
260.0	.414	2599.092	7673.729	84.508	.00028	1.766
280.0	.362	2274.206	6714.513	73.944	.00025	1.545
300.0	.310	1949.319	5755.297	63.381	.00021	1.324
320.0	.259	1624.432	4796.081	52.817	.00018	1.104
340.0	.207	1299.546	3836.865	42.254	.00014	.883
360.0	.155	974.659	2877.648	31.690	.00011	.662
380.0	.104	649.773	1918.432	21.127	.00007	.441
400.0	.069	433.182	1278.955	14.085	.00005	.294
420.0	.052	324.887	959.216	10.563	.00004	.221
440.0	.035	216.591	639.477	7.042	.00002	.147
460.0	.035	216.591	639.477	7.042	.00002	.147
480.0	.017	108.296	319.739	3.521	.00001	.074
500.0	.017	108.296	319.739	3.521	.00001	.074
520.0	.017	108.296	319.739	3.521	.00001	.074
540.0	.017	108.296	319.739	3.521	.00001	.074
560.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-21

EVAPORATION EXPERIMENT NO. 9LF5 SERIES TO 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.363	8555.345	25259.360	314.388	.00093	5.812
30.0	1.242	7797.276	23021.190	286.531	.00084	5.297
60.0	1.156	7255.799	21422.490	266.633	.00079	4.929
90.0	1.121	7039.207	20783.020	258.674	.00075	4.782
120.0	1.087	6822.617	20143.540	250.715	.00074	4.635
150.0	1.052	6606.026	19504.060	242.755	.00071	4.488
180.0	1.035	6497.730	19184.320	238.7[illegible]6	.00070	4.414
210.0	1.000	6281.139	18544.840	230.817	.00068	4.267
240.0	.966	6064.548	17905.370	222.857	.00066	4.120
270.0	.932	5847.957	17265.890	214.898	.00063	3.973
300.0	.897	5631.366	16626.410	206.939	.00061	3.826
330.0	.863	5414.775	15986.940	198.980	.00059	3.679
360.0	.811	5089.888	15027.720	187.041	.00055	3.458
390.0	.759	4765.002	14068.500	175.102	.00052	3.237
420.0	.707	4440.116	13109.290	163.163	.00048	3.016
450.0	.655	4115.229	12150.070	151.225	.00045	2.796
480.0	.604	3790.343	11190.850	139.286	.00041	2.575
510.0	.552	3465.456	10231.640	127.347	.00038	2.354
540.0	.517	3248.865	9592.161	119.388	.00035	2.207
570.0	.466	2923.979	8632.945	107.449	.00032	1.986
600.0	.414	2599.092	7673.729	95.510	.00028	1.766
630.0	.362	2274.206	6714.513	83.572	.00025	1.545
660.0	.310	1949.319	5755.297	71.633	.00021	1.324
690.0	.259	1624.432	4796.081	59.694	.00018	1.104
720.0	.207	1299.546	3836.865	47.755	.00014	.883
750.0	.172	1082.955	3197.387	39.796	.00012	.736
780.0	.155	974.659	2877.648	35.816	.00011	.662
810.0	.138	866.364	2557.910	31.837	.00009	.589
840.0	.121	758.069	2238.171	27.857	.00008	.515
870.0	.104	649.773	1918.432	23.878	.00007	.441
900.0	.086	541.477	1598.693	19.898	.00006	.368
930.0	.052	324.887	959.216	11.939	.00004	.221
960.0	.052	324.887	959.216	11.939	.00004	.221
990.0	.052	324.887	959.216	11.939	.00004	.221
1020.0	.035	216.591	639.477	7.959	.00002	.147
1050.0	.035	216.591	639.477	7.959	.00002	.147
1080.0	.017	108.296	319.739	3.980	.00001	.074
1110.0	.017	108.296	319.739	3.980	.00001	.074
1140.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-22

EVAPORATION EXPERIMENT NO. BLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	1.414	8880.231	26218.580	306.382	.00096	6.033
40.0	1.363	8555.345	25259.360	295.173	00093	5.812
80.0	1.328	8338.754	24619.880	287.700	.00090	5.665
120.0	1.259	7905.571	23340.920	272.755	.00086	5.371
160.0	1.225	7688.981	22701.450	265.282	.00083	5.223
200.0	1.173	7364.095	21742.230	254.073	.00080	5.003
240.0	1.121	7039.207	20783.020	242.864	.00076	4.782
280.0	1.069	6714.321	19823.800	231.655	.00073	4.561
320.0	1.018	6389.435	18864.580	220.446	.00069	4.341
360.0	.966	6064.548	17905.370	209.237	.00066	4.120
400.0	.914	5739.662	16946.150	198.028	.00062	3.899
440.0	.845	5306.479	15667.200	183.082	.00057	3.605
480.0	.759	4765.002	14068.500	164.400	.00052	3.237
520.0	.673	4223.524	12469.810	145.718	.00046	2.869
560.0	.604	3790.343	11190.850	130.773	.00041	2.575
600.0	.517	3248.865	9592.161	112.091	.00035	2.207
640.0	.431	2707.387	7993.468	93.409	.00029	1.839
680.0	.345	2165.910	6394.774	74.727	.00023	1.471
720.0	.293	1841.024	5435.559	63.518	.00020	1.251
760.0	.242	1516.137	4476.342	52.309	.00016	1.030
800.0	.207	1299.546	3836.865	44.836	.00014	.883
840.0	.172	1082.955	3197.387	37.364	.00012	.736
880.0	.138	866.364	2557.910	29.891	.00009	.589
920.0	.121	758.069	2238.171	26.155	.00008	.515
960.0	.104	649.773	1918.432	22.418	.00007	.441
1000.0	.086	541.477	1598.693	18.682	.00006	.368
1040.0	.069	433.182	1278.955	14.945	.00005	.294
1080.0	.052	324.887	959.216	11.209	.00004	.221
1120.0	.035	216.591	639.477	7.473	.00002	.147
1160.0	.035	216.591	639.477	7.473	.00002	.147
1200.0	.017	108.296	319.739	3.736	.00001	.074
1240.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-23

EVAPORATION EXPERIMENT NO. BLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	.759	4765.002	14068.500	183.046	.00052	3.237
15.0	.742	4656.707	13748.760	178.886	.00050	3.164
30.0	.707	4440.116	13109.290	170.566	.00048	3.016
45.0	.690	4331.820	12789.550	166.406	.00047	2.943
60.0	.673	4223.524	12469.810	162.245	.00046	2.869
75.0	.638	4006.933	11830.330	153.925	.00043	2.722
90.0	.604	3790.343	11190.850	145.605	.00041	2.575
105.0	.587	3682.047	10871.120	141.445	.00040	2.501
120.0	.552	3465.456	10231.640	133.124	.00033	2.354
135.0	.535	3357.160	9911.899	128.964	.00036	2.281
150.0	.517	3248.865	9592.161	124.804	.00035	2.207
165.0	.483	3032.274	8952.685	116.484	.00033	2.060
180.0	.466	2923.979	8632.945	112.324	.00032	1.986
195.0	.431	2707.387	7993.468	104.003	.00029	1.839
210.0	.397	2490.797	7353.991	95.683	.00027	1.692
225.0	.362	2274.206	6714.513	87.363	.00025	1.545
240.0	.328	2057.615	6075.036	79.043	.00022	1.398
255.0	.276	1732.728	5115.820	66.562	.00019	1.177
270.0	.242	1516.137	4476.342	58.242	.00016	1.030
285.0	.224	1407.842	4156.604	54.082	.00015	.956
300.0	.190	1191.250	3517.126	45.762	.00013	.809
315.0	.155	974.659	2877.648	37.441	.00011	.662
330.0	.138	866.364	2557.910	33.281	.00009	.589
345.0	.121	758.069	2238.171	29.121	.00008	.515
360.0	.104	649.773	1918.432	24.961	.00007	.441
375.0	.086	541.477	1598.693	20.801	.00006	.368
390.0	.069	433.182	1278.955	16.641	.00005	.294
405.0	.052	324.887	959.216	12.480	.00004	.221
420.0	.052	324.887	959.216	12.480	.00004	.221
435.0	.035	216.591	639.477	8.320	.00002	.147
450.0	.035	216.591	639.477	8.320	.00002	.147
465.0	.017	108.296	319.739	4.160	.00001	.074
480.0	.017	108.296	319.739	4.160	.00001	.074
495.0	.017	108.296	319.739	4.160	.00001	.074
510.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

TABLE C-24

EVAPORATION EXPERIMENT NO. 8LF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

VAPOR CONTAMINATION FROM A UNIFORM ARRAY OF DEPOSITED DROPLETS
(PPM/AB BASED ON MIRAN CALIBRATION DATA)

ELAPSED TIME MINUTES	PPM	MICROGRAMS PER CUBIC METER	* PER METER SQUARED	* PER GRAM/ METER SQD	PPM PER DROP	MICROGRAMS PER CUBIC METER PER DROP
.0	.850	5336.300	15755.240	176.903	.00058	3.625
15.0	.816	5122.848	15125.030	169.827	.00055	3.480
30.0	.782	4909.396	14494.820	162.751	.00053	3.335
45.0	.748	4695.944	13864.610	155.675	.00051	3.190
60.0	.714	4482.492	13234.400	148.598	.00049	3.045
75.0	.697	4375.766	12919.300	145.060	.00047	2.973
90.0	.680	4269.040	12604.190	141.522	.00046	2.900
105.0	.646	4055.588	11973.980	134.446	.00044	2.755
120.0	.629	3948.862	11658.880	130.908	.00043	2.683
135.0	.612	3842.136	11343.770	127.370	.00042	2.610
150.0	.595	3735.410	11028.670	123.832	.00040	2.538
165.0	.578	3628.684	10713.560	120.294	.00039	2.465
180.0	.561	3521.958	10398.460	116.756	.00038	2.393
195.0	.544	3415.232	10083.350	113.218	.00037	2.320
210.0	.510	3201.780	9453.145	106.142	.00035	2.[illegible]
225.0	.493	3095.054	9138.039	102.604	.00033	2.103
240.0	.459	2881.602	8507.830	95.528	.00031	1.958
255.0	.442	2774.876	8192.726	91.989	.00030	1.885
270.0	.425	2668.150	7877.621	88.451	.00029	1.813
285.0	.357	2241.246	6617.201	74.299	.00024	1.523
300.0	.323	2027.794	5986.991	67.223	.00022	1.378
315.0	.289	1814.342	5356.782	60.147	.00020	1.233
330.0	.255	1600.890	4726.572	53.071	.00017	1.088
345.0	.221	1387.438	4096.363	45.995	.00015	.943
360.0	.187	1173.986	3466.153	38.919	.00013	.798
375.0	.153	960.534	2835.943	31.843	.00010	.653
390.0	.119	747.082	2205.734	24.766	.00008	.508
405.0	.085	533.630	1575.524	17.690	.00006	.363
420.0	.068	426.904	1260.419	14 152	.00005	.290
435.0	.034	213.452	630.210	7.076	.00002	.145
450.0	.017	106.726	315.105	3.538	.00001	.073
465.0	.017	106.726	315.105	3.538	.00001	.073
480.0	.000	.000	.000	.000	.00000	.000

* MICROGRAMS PER CUBIC METER

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APPENDIX D

EVAPORATION HISTORY OF TEST DROPLET, MEASURED AND THEORETICAL

TABLE D-1

EVAPORATION EXPERIMENT NO. GLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 45%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.20707	1.000000	.000000	.00000	6.20707	1.000000	.0000	.00000
30.0	5.66969	.913426	.537370	.08657	5.70427	.918997	.0345	.12187
60.0	5.19179	.836432	1.015277	.16357	5.24221	.844555	.0690	.24374
90.0	4.76674	.767953	1.440328	.23205	4.81757	.776143	.1034	.36561
120.0	[illegible].37913	.705507	1.827939	.29449	4.42733	.713273	.1379	.48747
150.0	4.02455	.648382	2.182515	.35162	4.06870	.655495	.1724	.60934
180.0	3.70521	.596934	2.567854	.40307	3.73912	.602398	.2069	.73121
210.0	3.41671	.550454	2.790360	.44955	3.43624	.553601	.2414	.85308
240.0	3.15243	.507877	3.054640	.49212	3.15789	.508758	.2759	.97495
270.0	2.91457	.469557	3.292493	.53044	2.90209	.467547	.3103	1.09682
300.0	2.70095	.435141	3.506119	.56486	2.66701	.429674	.3448	1.21869
330.0	2.50934	.404272	3.697723	.59573	2.45098	.394869	.3793	1.34055
360.0	2.33976	.376951	3.867303	.62305	2.25244	.362883	.4138	1.46242
390.0	2.19000	.352824	4.017062	.64718	2.06998	.333488	.4483	1.58429
420.0	2.05786	.331536	4.149202	.66846	1.90231	.306475	.4828	1.70616
450.0	1.94554	.313440	4.261521	.68656	1.74821	.281649	.5172	1.82803
480.0	1.85305	.298538	4.354019	.70146	1.60660	.258835	.5517	1.94990
510.0	1.77817	.286475	4.428898	.71353	1.47646	.237868	.5862	2.07177
540.0	1.71870	.276895	4.488362	.72311	1.35686	.218600	.6207	2.19364
570.0	1.67025	.269089	4.536813	.73091	1.24695	.200893	.6552	2.31550
600.0	1.63061	.262702	4.576455	.73730	1.14595	.184620	.6897	2.43737
630.0	1.59978	.257735	4.607288	.74227	1.05312	.169665	.7241	2.55924
660.0	1.57555	.253832	4.631514	.74617	.96781	.155921	.7586	2.68111
690.0	1.55573	.250639	4.651335	.74936	.88942	.143291	.7931	2.80298
720.0	1.54031	.248155	4.666751	.75185	.81737	.131684	.8276	2.92485
750.0	1.52930	.246381	4.677763	.75362	.75116	.121017	.8621	3.04672
780.0	1.52049	.244962	4.686572	.75504	.69032	.111214	.8966	3.16858
810.0	1.51389	.243897	4.693179	.75610	.63440	.102206	.9310	3.29045
840.0	1.50948	.243188	4.697584	.75681	.58301	.093927	.9655	3.41232
870.0	1.50728	.242833	4.699786	.75717	.53578	.086318	1.0000	3.53419

TABLE D-2

EVAPORATION EXPERIMENT NO. GLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.46739	1.000000	.000000	.00000	6.46739	1.000000	.0000	.00000
30.0	5.98728	.925765	.480109	.07424	5.97791	.924316	.0294	.11354
60.0	5.54241	.856978	.924981	.14302	5.52548	.854360	.0588	.22708
90.0	5.13057	.793299	1.336819	.20670	5.10729	.789699	.0882	.34063
120.0	4.74737	.734047	1.720025	.26595	4.72075	.729932	.1176	.45417
150.0	4.38839	.678540	2.079005	.32146	4.36347	.674688	.1471	.56771
180.0	4.05363	.626780	2.413761	.37322	4.03322	.623625	.1765	.68125
210.0	3.74310	.578765	2.724290	.42123	3.72797	.576426	.2059	.79479
240.0	3.45239	.533815	3.014998	.46618	3.44583	.532800	.2353	.90833
270.0	3.18151	.491930	3.285886	.50807	3.18503	.492476	.2647	1.02188
300.0	2.93264	.453450	3.534750	.54655	2.94398	.455203	.2941	1.13542
330.0	2.70360	.418035	3.763793	.58196	2.72117	.420752	.3235	1.24896
360.0	2.49217	.385345	3.975217	.61466	2.51522	.388908	.3529	1.36250
390.0	2.29837	.355378	4.169023	.64462	2.32486	.359474	.3824	1.47604
420.0	2.12218	.328136	4.345210	.67186	2.14890	.332267	.4118	1.58958
450.0	1.96361	.303618	4.503778	.69638	1.98627	.307120	.4412	1.70313
480.0	1.82266	.281824	4.644727	.71818	1.83594	.283876	.4706	1.81667
510.0	1.69933	.262754	4.768058	.73725	1.69699	.262391	.5000	1.93021
540.0	1.59362	.246409	4.873771	.75359	1.56855	.242532	.5294	2.04375
570.0	1.50332	.232447	4.964067	.76755	1.44984	.224177	.5588	2.15729
600.0	1.42624	.220528	5.041148	.77947	1.34011	.207210	.5882	2.27083
630.0	1.36237	.210653	5.105017	.78935	1.23863	.191528	.6176	2.38438
660.0	1.30952	.202480	5.157873	.79752	1.14494	.177032	.6471	2.49792
690.0	1.26327	.195329	5.204121	.80467	1.05828	.163634	.6765	2.61146
720.0	1.22363	.189200	5.243763	.81080	.97819	.151249	.7059	2.72500
750.0	1.19059	.184092	5.276799	.81591	.90415	.139802	.7353	2.83854
780.0	1.15976	.179324	5.307631	.82068	.83572	.129221	.7647	2.95208
810.0	1.13113	.174897	5.336262	.82510	.77247	.119441	.7941	3.06563
840.0	1.10690	.171152	5.360487	.82885	.71401	.110402	.8235	3.17917
870.0	1.08708	.168087	5.380308	.83191	.65997	.102046	.8529	3.29271
900.0	1.07167	.165703	5.395724	.83430	.61002	.094323	.8824	3.40625
930.0	1.06066	.164000	5.406736	.83600	.56385	.087184	.9118	3.51979
960.0	1.05405	.162979	5.413347	.83702	.52118	.080586	.9412	3.63333
990.0	1.04964	.162298	5.417747	.83770	.48173	.074487	.9706	3.74688
1020.0	1.04744	.161957	5.419950	.83804	.44527	.068849	1.0000	3.86042

TABLE D-3

EVAPORATION EXPERIMENT NO. GLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	5.54674	1.000000	.000000	.00000	5.54674	1.000000	.0000	.00000
15.0	4.89668	.882804	.650056	.11720	4.89933	.883281	.0417	.17906
30.0	4.32738	.780166	1.219360	.21983	4.32749	.780185	.0833	.35811
45.0	3.82268	.689175	1.724062	.31082	3.82239	.689123	.1250	.53717
60.0	3.37450	.608376	2.172238	.39162	3.37624	.608689	.1667	.71622
75.0	2.97881	.537039	2.567924	.46296	2.98217	.537644	.2083	.89528
90.0	2.62754	.473709	2.919197	.52629	2.63409	.474891	.2500	1.07433
105.0	2.31665	.417659	3.230093	.58234	2.32664	.419462	.2917	1.25339
120.0	2.04613	.368888	3.500614	.63111	2.05508	.370503	.3333	1.43244
135.0	1.81598	.327396	3.730758	.67260	1.81521	.327258	.3750	1.61150
150.0	1.62621	.293184	3.920526	.70682	1.60334	.289061	.4167	1.79056
165.0	1.46875	.264794	4.077993	.73521	1.41620	.255322	.4583	1.96961
180.0	1.33550	.240773	4.211235	.75923	1.25091	.225521	.5000	2.14867
195.0	1.22649	.221119	4.320250	.77888	1.10490	.199198	.5417	2.32772
210.0	1.14170	.205832	4.405040	.79417	.97594	.175948	.5833	2.50678
225.0	1.07710	.194186	4.469642	.80581	.86203	.155412	.6250	2.68583
240.0	1.02865	.185450	4.518094	.81455	.76141	.137272	.6667	2.86489
255.0	.99231	.178899	4.554432	.82110	.67254	.121250	.7083	3.04394
270.0	.96001	.173076	4.586733	.82692	.59404	.107098	.7500	3.22300
285.0	.93174	.167980	4.614996	.83202	.52471	.094597	.7917	3.40206
300.0	.90752	.163613	4.639223	.83639	.46346	.083556	.8333	3.58111
315.0	.88733	.159973	4.659410	.84003	.40937	.073804	.8750	3.76017
330.0	.87522	.157789	4.671524	.84221	.36159	.065189	9167	3.93922
34[illegible].0	.86714	.156333	4.679599	.84367	.31938	.057580	.9583	4.11828
[illegible].0	.86310	.155605	4.683637	.84439	.28211	.050860	1.0000	4.29733

TABLE D-4

EVAPORATION EXPERIMENT NO. GLF4 SERIES 10 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.46739	1.000000	.000000	.00000	6.46739	1.000000	.0000	.00000
10.0	6.07709	.939651	.390303	.06035	6.02601	.931891	.0270	.10177
20.0	5.69217	.880134	.775222	.11987	5.61642	.868422	.0541	.20353
30.0	5.31802	.822282	1.149375	.17772	5.23389	.809275	.0811	.30530
40.0	4.96271	.767343	1.504685	.23266	4.87742	.754156	.1081	.40707
50.0	4.62893	.715734	1.838462	.28427	4.54523	.702792	.1351	.50883
60.0	4.31130	.666622	2.156087	.33338	4.23566	.654925	.1622	.61060
70.0	4.00714	.619591	2.460255	.38041	3.94717	.610319	.1892	.71236
80.0	3.71911	.575057	2.748271	.42494	3.67834	.568751	.2162	.81413
90.0	3.44725	.533021	3.020138	.46698	3.42781	.530014	.2432	.91590
100.0	3.18885	.493065	3.278545	.50693	3.19435	.493916	.2703	1.01766
110.0	2.94390	.455191	3.523494	.54481	2.97678	.460275	.2973	1.11943
120.0	2.71510	.419814	3.752292	.58019	2.77404	.428927	.3243	1.22120
130.0	2.49976	.386517	3.967632	.61348	2.58510	.399714	.3514	1.32296
140.0	2.29519	.354886	4.172206	.64511	2.40904	.372490	.3784	1.42473
150.0	2.10407	.325336	4.363318	.67466	2.24496	.347120	.4054	1.52649
160.0	1.92642	.297866	4.540974	.70213	2.09206	.323478	.4324	1.62826
170.0	1.75953	.272062	4.707862	.72794	1.94957	.301446	.4595	1.73003
180.0	1.60341	.247922	4.863983	.75208	1.81679	.280915	.4865	1.83179
190.0	1.45805	.225447	5.009337	.77455	1.69305	.261783	.5135	1.93356
200.0	1.32367	.204637	5.143925	.79536	1.57774	.243953	.5405	2.03533
210.0	1.19965	.185492	5.267745	.81451	1.47028	.227338	.5676	2.13709
220.0	1.08659	.168011	5.380798	.83199	1.37014	.211854	.5946	2.23886
230.0	.98431	.152195	5.483084	.84780	1.27682	.197625	.6216	2.34062
240.0	.89279	.138045	5.574603	.86196	1.18926	.183979	.6486	2.44239
250.0	.81204	.125558	5.655355	.87444	1.10882	.171448	.6757	2.54416
260.0	.73936	.114321	5.728033	.88568	1.03330	.159771	.7027	2.64592
270.0	.67476	.104332	5.792634	.89567	.96292	.148889	.7297	2.74769
280.0	.62092	.096008	5.846469	.90399	.89734	.138749	.7568	2.84946
290.0	.57516	.088933	5.892230	.91107	.83622	.129299	.7838	2.95122
300.0	.53479	.082690	5.932605	.91731	.77927	.120492	.8108	3.05299
310.0	.49979	.077279	5.967598	.92272	.72620	.112286	.8378	3.15475
320.0	.47018	.072701	5.997207	.92730	.67674	.104638	.8649	3.25652
330.0	.44596	.068955	6.021433	.93105	.63064	.097511	.8919	3.35829
340.0	.42981	.066458	6.037583	.93354	.58769	.090870	.9189	3.46005
350.0	.41904	.064793	6.048350	.93521	.54766	.084681	.9459	3.56182
360.0	.41097	.063544	6.056426	.93646	.51036	.078911	.9730	3.66359
370.0	.40827	.063128	6.059118	.93687	.47560	.073539	1.0000	3.76535

TABLE D-5

EVAPORATION EXPERIMENT NO. GLF5 SERIES 10 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 58%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	5.54674	1.000000	.000000	.00000	5.54674	1.000000	.0000	.00000
30.0	5.21198	.939648	.334755	.06035	5.19749	.937035	.0345	.09382
60.0	4.89264	.882076	.654094	.11792	4.87023	.878035	.0690	.18765
90.0	4.58872	.827283	.958016	.17272	4.56358	.822750	.1034	.28147
120.0	4.30242	.775666	1.244320	.22433	4.27623	.770945	.1379	.37530
150.0	4.03153	.726829	1.515208	.27317	4.00698	.722403	.1724	.46912
180.0	3.77606	.680771	1.770679	.31923	3.75468	.676917	.2069	.56295
210.0	3.53601	.637495	2.010753	.36251	3.51827	.634295	.2414	.65677
240.0	3.30917	.596596	2.237574	.40340	3.29674	.594357	.2759	.75060
270.0	3.09554	.558083	2.451200	.44192	3.08916	.556933	.3103	.84442
300.0	2.89513	.521951	2.651613	.47805	2.89465	.521866	.3448	.93825
330.0	2.71013	.488599	2.836610	.51140	2.71239	.489007	.3793	1.03207
360.0	2.54275	.458425	3.003987	.54153	2.54161	.458217	.4138	1.12590
390.0	2.39079	.431026	3.155948	.56897	2.38158	.429365	.4483	1.21972
420.0	2.25204	.406012	3.294695	.59399	2.23162	.402330	.4828	1.31355
450.0	2.12431	.382983	3.422431	.61702	2.09111	.376998	.5172	1.40737
480.0	2.00758	.361946	3.539155	.63806	1.95944	.353260	.5517	1.50120
510.0	1.90187	.342881	3.644867	.65712	1.83606	.331017	.5862	1.59502
540.0	1.80497	.325411	3.741770	.67459	1.72046	.310175	.6207	1.68885
570.0	1.71908	.309926	3.827661	.69007	1.61213	.290645	.6552	1.78267
600.0	1.64420	.296426	3.902540	.70357	1.51052	.272344	.6897	1.87650
630.0	1.58033	.284912	3.966408	.71509	1.41551	.255196	.7241	1.97032
660.0	1.52747	.275383	4.019264	.72462	1.32638	.239126	.7586	2.06415
690.0	1.48563	.267839	4.061109	.73216	1.24285	.224071	.7931	2.15797
720.0	1.45480	.262280	4.091941	.73772	1.16461	.209962	.8276	2.25180
750.0	1.43277	.258309	4.113964	.74169	1.09128	.196742	.8621	2.34562
780.0	1.41736	.255530	4.129380	.74447	1.02257	.184356	.8966	2.43945
810.0	1.40635	.253545	4.140392	.74646	.95815	.172747	.9310	2.53327
840.0	1.39974	.252354	4.146999	.74765	.89785	.161870	.9655	2.62710
870.0	1.39754	.251957	4.149201	.74804	.84132	.151678	1.0000	2.72092

TABLE D-6

EVAPORATION EXPERIMENT NO. GLF6 SERIES 10 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1200 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 3? GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.07935	1.000000	.000000	.00000	6.07935	1.000000	.0000	.00000
30.0	5.74900	.945660	.330350	.05434	5.71066	.939354	.0333	.09026
60.0	5.42966	.893132	.649689	.10687	5.36433	.882385	.0667	.18052
90.0	5.11913	.842052	.960219	.15795	5.03900	.828872	.1000	.27078
120.0	4.81961	.792784	1.259735	.20722	4.73341	.778604	.1333	.36104
150.0	4.53331	.745670	1.546040	.25431	4.44634	.731385	.1667	.45130
180.0	4.25581	.700044	1.823534	.29996	4.17669	.687029	.2000	.54156
210.0	3.98933	.656210	2.090017	.34379	3.92339	.645363	.2333	.63182
240.0	3.73606	.614550	2.343286	.38545	3.68545	.606224	.2667	.72208
270.0	3.49601	.575062	2.583340	.42494	3.46194	.569459	.3000	.81234
300.0	3.26917	.537750	2.810181	.46225	3.25199	.534924	.3333	.90259
330.0	3.05554	.502610	3.023808	.49739	3.05477	.502483	.3667	.99285
360.0	2.85513	.469644	3.224220	.53036	2.86951	.472009	.4000	1.08311
390.0	2.66793	.438851	3.411419	.56115	2.69548	.443385	.4333	1.17337
420.0	2.49394	.410232	3.585403	.58977	2.53201	.416494	.4667	1.26363
450.0	2.33317	.383787	3.746174	.61621	2.37845	.391235	.5000	1.35389
480.0	2.18562	.359515	3.893730	.64048	2.23421	.367508	.5333	1.44415
510.0	2.05127	.337417	4.028073	.66258	2.09871	.345220	.5667	1.53441
540.0	1.93015	.317492	4.149202	.68251	1.97143	.324284	.6000	1.62467
570.0	1.82223	.299741	4.257116	.70026	1.85187	.304617	.6333	1.71493
600.0	1.72753	.284164	4.351817	.71584	1.73957	.286143	.6667	1.80519
630.0	1.64604	.270760	4.433303	.72924	1.63407	.268790	.7000	1.89545
660.0	1.57777	.259530	4.501576	.74047	1.53497	.252489	.7333	1.98571
690.0	1.52271	.250473	4.556634	.74953	1.44188	.237176	.7667	2.07597
720.0	1.48087	.243590	4.598478	.75641	1.35443	.222792	.8000	2.16623
750.0	1.45004	.238523	4.629311	.76148	1.27229	.209281	.8333	2.25649
780.0	1.42581	.234534	4.653537	.76547	1.19513	.196589	.8667	2.34675
810.0	1.40819	.231635	4.671156	.76836	1.12265	.184666	.9000	2.43701
840.0	1.39718	.229824	4.682168	.77018	1.05457	.173467	.9333	2.52727
870.0	1.39057	.228737	4.688775	.77126	.99061	.162947	.9667	2.61753
900.0	1.38837	.228375	4.690977	.77162	.93053	.153065	1.0000	2.70778

TABLE D-7

EVAPORATION EXPERIMENT NO. GL77 SERIES (D 2**4 FACTORIAL EXPERIMENT

DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY

NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE

WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.07500	1.000000	.000000	.00000	6.07500	1.000000	.0000	.00000
15.0	5.70494	.939085	.370056	.06091	5.66336	.932240	.0313	.10123
30.0	5.35478	.881446	.720217	.11855	5.27961	.869071	.0625	.20245
45.0	5.01656	.825771	1.058441	.17423	4.92185	.810197	.0938	.30368
60.0	4.69027	.772061	1.384727	.22794	4.58835	.755284	.1250	.40491
75.0	4.37990	.720972	1.695097	.27903	4.27744	.704106	.1563	.50614
90.0	4.08147	.671847	1.993530	.32815	3.98760	.656396	.1875	.60736
105.0	3.79498	.624687	2.280025	.37531	3.71740	.611919	.2188	.70859
120.0	3.52046	.579493	2.554583	.42051	3.46551	.570455	.2500	.80982
135.0	3.25780	.536263	2.817205	.46374	3.23069	.531800	.2813	.91104
150.0	3.00711	.494998	3.067886	.50500	3.01178	.495764	.3125	1.01227
165.0	2.76837	.455698	3.306632	.54430	2.80770	.462172	.3438	1.11350
180.0	2.54554	.419019	3.529460	.58098	2.61743	.430855	.3750	1.21472
195.0	2.33465	.384304	3.740354	.61570	2.44009	.401661	.4063	1.31595
210.0	2.13569	.351554	3.939310	.64845	2.27475	.374454	.4375	1.41718
225.0	1.95265	.321424	4.122348	.67853	2.12061	.349072	.4688	1.51841
240.0	1.78553	.293914	4.289470	.70609	1.97692	.325418	.5000	1.61963
255.0	1.63432	.269025	4.440676	.73098	1.84297	.303368	.5313	1.72086
270.0	1.49903	.246755	4.575965	.75325	1.71808	.282812	.5625	1.82209
285.0	1.37966	.227105	4.695338	.77290	1.60166	.263648	.5938	1.92331
300.0	1.27223	.209420	4.802774	.79058	1.49313	.245783	.6250	2.02454
315.0	1.17673	.193700	4.898273	.80630	1.39196	.229129	.6563	2.12577
330.0	1.09715	.180600	4.977855	.81940	1.29764	.213603	.6875	2.22699
345.0	1.03348	.170120	5.041520	.82988	1.20971	.199129	.7188	2.32822
360.0	.98175	.161605	5.093248	.83839	1.12774	.185636	.7500	2.42945
375.0	.93798	.154400	5.137019	.84560	1.05133	.173058	.7813	2.53068
390.0	.90217	.148505	5.172831	.85149	.98009	.161331	.8125	2.63190
405.0	.87432	.143920	5.200665	.85608	.91368	.150399	.8438	2.73313
420.0	.85442	.140645	5.220580	.85935	.85177	.140208	.8750	2.83436
435.0	.83850	.138025	5.236496	.86197	.79405	.130708	.9063	2.93558
450.0	.82657	.136060	5.248434	.86394	.74024	.121851	.9375	3.03681
465.0	.81861	.134750	5.256392	.86525	.69009	.113594	.9688	3.13804
480.0	.81463	.134095	5.260371	.86590	.64332	.105897	1.0000	3.23926

TABLE D-8

EVAPORATION EXPERIMENT NO. SLFS SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.46739	1.000000	.000000	.00000	6.46739	1.000000	.0000	.00000
15.0	6.10178	.943469	.365609	.05653	6.04932	.935357	.0313	.09641
30.0	5.74864	.888865	.718754	.11114	5.65827	.874892	.0625	.19282
45.0	5.40380	.835546	1.063590	.16445	5.29250	.818336	.0938	.28923
60.0	5.07143	.784154	1.395962	.21585	4.95037	.765435	.1250	.38565
75.0	4.75152	.734689	1.715870	.26531	4.63036	.715956	.1563	.48206
90.0	4.44408	.687151	2.023314	.31285	4.33104	.669674	.1875	.57847
105.0	4.14910	.641541	2.318294	.35846	4.05107	.626384	.2188	.67488
120.0	3.86243	.597216	2.604965	.40278	3.78919	.585892	.2500	.77129
135.0	3.58822	.554817	2.879172	.44518	3.54425	.548018	.2813	.86770
150.0	3.32648	.514346	3.140914	.48565	3.31514	.512592	.3125	.96412
165.0	3.07720	.475802	3.390193	.52420	3.10083	.479457	.3438	1.06053
180.0	2.84038	.439185	3.627008	.56081	2.90039	.448463	.3750	1.15694
195.0	2.61603	.404496	3.851359	.59550	2.71289	.419473	.4063	1.25335
210.0	2.40414	.371733	4.063247	.62827	2.53752	.392357	.4375	1.34976
225.0	2.20472	.340898	4.262670	.65910	2.37349	.366993	.4688	1.44617
240.0	2.01776	.311990	4.449529	.68801	2.22095	.343270	.5000	1.54259
255.0	1.84327	.285009	4.624125	.71499	2.07655	.321080	.5313	1.63900
270.0	1.68124	.259956	4.786156	.74004	1.94231	.300324	.5625	1.73541
285.0	1.53167	.236829	4.935723	.76317	1.81675	.280910	.5938	1.83182
300.0	1.39456	.215630	5.072827	.78437	1.69931	.262751	.6250	1.92823
315.0	1.26992	.196358	5.197466	.80364	1.58946	.245766	.6563	2.02464
330.0	1.15775	.179013	5.309642	.82099	1.48672	.229879	.6875	2.12105
345.0	1.05804	.163596	5.409354	.83640	1.39061	.215019	.7188	2.21747
360.0	.97494	.150748	5.492447	.84925	1.30072	.201119	.7500	2.31388
375.0	.90432	.139827	5.563076	.86017	1.21663	.188118	.7813	2.41029
390.0	.84615	.130833	5.621240	.86917	1.13799	.175957	.8125	2.50670
405.0	.80045	.123767	5.666942	.87623	1.06442	.164583	.8438	2.60311
420.0	.76721	.118628	5.703179	.88137	.99561	.153944	.8750	2.69952
435.0	.74644	.115416	5.720953	.88458	.93125	.143992	.9063	2.79594
450.0	.73397	.113489	5.733417	.88651	.87106	.134684	.9375	2.89235
465.0	.72567	.112204	5.741726	.88780	.81475	.125978	.9688	2.98876
480.0	.72151	.111561	5.745881	.88844	.76308	.117634	1.0000	3.08517

TABLE D-9

EVAPORATION EXPERIMENT NO. GLF9 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	5.15054	1.000000	.000000	.00000	5.15054	1.000000	.0000	.00000
30.0	4.68260	.909147	.467942	.09085	4.73103	.918550	.0385	.12257
60.0	4.33013	.840712	.820418	.15929	4.34569	.843733	.0769	.24514
90.0	3.99385	.775424	1.156689	.22458	3.99173	.775011	.1154	.36771
120.0	3.67582	.713675	1.474727	.28632	3.66660	.711886	.1538	.49028
150.0	3.38209	.656647	1.768457	.34335	3.36795	.653903	.1923	.61285
180.0	3.10659	.603157	2.043956	.39684	3.09363	.600642	.2308	.73542
210.0	2.84932	.553208	2.301222	.44679	2.84166	.551720	.2692	.85799
240.0	2.61029	.506798	2.540258	.49320	2.61020	.506782	.3077	.98056
270.0	2.38948	.463928	2.761061	.53607	2.39760	.465504	.3462	1.10313
300.0	2.18691	.424598	2.963634	.57540	2.20231	.427589	.3846	1.22570
330.0	2.00257	.388807	3.147975	.61119	2.02293	.392761	.4231	1.34827
360.0	1.83646	.356556	3.314084	.64344	1.85817	.360771	.4615	1.47085
390.0	1.68858	.327845	3.461962	.67215	1.70682	.331386	.5000	1.59342
420.0	1.55893	.302674	3.591609	.69733	1.56780	.304394	.5385	1.71599
450.0	1.44752	.281042	3.703023	.71896	1.44010	.279601	.5769	1.83856
480.0	1.35434	.262950	3.796207	.73705	1.32280	.256828	.6154	1.96113
510.0	1.27736	.248005	3.873184	.75200	1.21506	.235909	.6538	2.08370
540.0	1.21456	.235812	3.935982	.76419	1.11609	.216694	.6923	2.20627
570.0	1.16392	.225980	3.986625	.77402	1.02519	.199044	.7308	2.32884
600.0	1.12543	.218507	4.025114	.78149	.94168	.182832	.7692	2.45141
630.0	1.09707	.213001	4.053473	.78700	.86498	.167940	.8077	2.57398
660.0	1.07681	.209068	4.073730	.79093	.79453	.154262	.8462	2.69655
690.0	1.06263	.206315	4.087911	.79369	.72982	.141697	.8846	2.81912
720.0	1.05250	.204348	4.098040	.79565	.67037	.130156	.9231	2.94169
750.0	1.04643	.203168	4.104116	.79683	.61577	.119554	.9615	3 06426
780.0	1.04440	.202775	4.106143	.79723	.56562	.109817	1.0000	18683

TABLE D-10

EVAPORATION EXPERIMENT NO. GLF10 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 52%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.46739	1.000000	.000000	.00000	6.46739	1.000000	.0000	.00000
30.0	5.99051	.926264	.476879	.07374	6.01550	.930128	.0313	.10450
60.0	5.60408	.866512	.863316	.13349	5.59518	.865138	.0625	.20900
90.0	5.24025	.810257	1.227142	.18974	5.20424	.804688	.0938	.31350
120.0	4.89287	.756544	1.574524	.24346	4.84060	.748463	.1250	.41800
150.0	4.55987	.705056	1.907517	.29494	4.50238	.696166	.1563	.52250
180.0	4.24332	.656111	2.224066	.34389	4.18779	.647524	.1875	.62700
210.0	3.94116	.609390	2.526227	.39061	3.89518	.602280	.2188	73149
240.0	3.65339	.564894	2.813999	.43511	3.62301	.560197	.2500	[illegible]99
270.0	3.38001	.522623	3.087382	.47738	3.36986	.521055	.2813	.94[illegible]
300.0	3.12307	.482895	3.344321	.51711	3.13440	.484647	.3125	1.04[illegible]
330.0	2.88258	.445709	3.584816	.55429	2.91540	.450784	.3438	1.14949
360.0	2.65647	.410748	3.810923	.58925	2.71169	.419287	.3750	1.25399
390.0	2.44681	.378330	4.020586	.62167	2.52222	.389990	.4063	1.35849
420.0	2.25359	.348454	4.213804	.65155	2.34599	.362741	.4375	1.46299
450.0	2.07887	.321438	4.388523	.67856	2.18207	.337395	.4688	1.56749
480.0	1.92471	.297601	4.542686	.70240	2.02960	.313821	.5000	1.67199
510.0	1.78904	.276625	4.678350	.72338	1.88779	.291893	.5313	1.77649
540.0	1.66982	.258191	4.797570	.74181	1.75588	.271498	.5625	1.88099
570.0	1.56705	.242299	4.900346	.75770	1.63320	.252528	.5938	1.98549
600.0	1.47866	.228633	4.988733	.77137	1.51908	.234883	.6250	2.08998
630.0	1.40466	.217191	5.062731	.78281	1.41294	.218471	.6563	2.19448
660.0	1.34299	.207656	5.124397	.79234	1.31421	.203206	.6875	2.29898
690.0	1.28955	.199393	5.177841	.80061	1.22239	.189008	.7188	2.40348
720.0	1.24433	.192401	5.223062	.80760	1.13698	.175801	.7500	2.50798
750.0	1.20733	.186680	5.260061	.81332	1.05753	.163518	.7813	2.61248
780.0	1.17855	.182230	5.288838	.81777	.98364	.152092	.8125	2.71698
810.0	1.15594	.178734	5.311449	.82127	.91491	.141465	.8438	2.82148
840.0	1.13744	.175874	5.329948	.82413	.85098	.131581	.8750	2.92598
870.0	1.12305	.173649	5.344337	.82635	.79152	.122387	.9063	3.03048
900.0	1.11483	.172377	5.352559	.82762	.73622	.113836	.9375	3.13498
930.0	1.11072	.171742	5.356670	.8282[illegible]	.68478	.105882	.9688	3.23948
960.0	1.10867	.171424	5.358726	.8285[illegible]	.63693	098483	1.0000	3.34398

TABLE D-11

EVAPORATION EXPERIMENT NO. GLF11 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	5.67880	1.000000	.000000	.00000	5.67880	1.000000	.0000	.00000
10.0	5.33200	.938930	.346806	.06107	5.29797	.932938	.0278	.10015
20.0	5.00158	.880745	.677227	.11926	4.94268	.870374	.0556	.20029
30.0	4.68481	.824964	.993995	.17504	4.61122	.812005	.0833	.30044
40.0	4.38170	.771588	1.297109	.22841	4.30198	.757551	.1111	.40059
50.0	4.09224	.720616	1.586569	.27938	4.01348	.706748	.1389	.50073
60.0	3.81643	.672048	1.862375	.32795	3.74433	.659352	.1667	.60088
70.0	3.55428	.625885	2.124528	.37412	3.49323	.615135	.1944	.70102
80.0	3.30305	.581645	2.375757	.41836	3.25897	.573883	.2222	.80117
90.0	3.06274	.539328	2.616064	.46067	3.04042	.535397	.2500	.90132
100.0	2.83609	.499416	2.842716	.50058	2.83652	.499493	.2778	1.00146
110.0	2.62309	.461909	3.055715	.53809	2.64630	.465996	.3056	1.10161
120.0	2.42374	.426805	3.255060	.57319	2.46883	.434746	.3333	1.20176
130.0	2.23805	.394106	3.440752	.60589	2.30327	.405591	.3611	1.30190
140.0	2.06328	.363331	3.615520	.63667	2.14881	.378391	.3889	1.40205
150.0	1.90217	.334960	3.776635	.66504	2.00471	.353016	.4167	1.50220
160.0	1.75471	.308993	3.924096	.69101	1.87027	.329342	.4444	1.60234
170.0	1.61817	.284949	4.060633	.71505	1.74484	.307256	.4722	1.70249
180.0	1.49256	.262829	4.186248	.73717	1.62783	.286650	.5000	1.80264
190.0	1.38060	.243114	4.298209	.75689	1.51867	.267427	.5278	1.90278
200.0	1.28229	.225803	4.396516	.77420	1.41682	.249493	.5556	2.00293
210.0	1.19490	.210415	4.483900	.78959	1.32181	.232762	.5833	2.10307
220.0	1.11844	.196950	4.560361	.80305	1.23317	.217152	.6111	2.20322
230.0	1.05017	.184929	4.628631	.81507	1.15047	.202590	.6389	2.30337
240.0	.99010	.174350	4.688707	.82565	1.07331	.189004	.6667	2.40351
250.0	.93821	.165213	4.740591	.83479	1.00134	.176329	.6944	2.50366
260.0	.89179	.157038	4.787014	.84296	.93419	.164504	.7222	2.60381
270.0	.85083	.149825	4.827975	.85017	.87154	.153472	.7500	2.70395
280.0	.81533	.143574	4.863475	.85643	.81309	.143180	.7778	2.80410
290.0	.78529	.138285	4.893514	.86172	.75856	.133578	.8056	2.90425
300.0	.76071	.133957	4.918090	.86604	.70769	.124620	.8333	3.00439
310.0	.74160	.130591	4.937206	.86941	.66023	.116263	.8611	3.10454
320.0	.72521	.127706	4.953590	.87229	.61596	.108466	.8889	3.20469
330.0	.71156	.125301	4.967243	.87470	.57465	.101192	.9167	3.30483
340.0	.70337	.123859	4.975436	.87614	.53611	.094406	.9444	3.40498
350.0	.69791	.122897	4.980898	.87710	.50016	.088075	.9722	3.50512
360.0	.69518	.122416	4.983628	.87758	.46662	.082168	1.0000	3.60527

TABLE D-12

EVAPORATION EXPERIMENT NO. GLF12 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.46739	1.000000	.000000	.00000	6.46739	1.000000	.0000	.00000
10.0	6.18207	.955883	.285325	.04412	6.14691	.950447	.0256	.07332
20.0	5.90482	.913014	.562574	.08699	5.84232	.903350	.0513	.14664
30.0	5.63564	.871395	.831749	.12861	5.55282	.858587	.0769	.21996
40.0	5.37723	.831458	1.090157	.16856	5.27766	.816041	.1026	.29329
50.0	5.12690	.792731	1.340488	.20727	5.01614	.775604	.1282	.36661
60.0	4.88195	.754857	1.585437	.24514	4.76757	.737171	.1538	.43993
70.0	4.64508	.718231	1.822311	.28177	4.53133	.700642	.1795	.51325
80.0	4.41628	.682854	2.051110	.31715	4.30679	.665923	.2051	.58657
90.0	4.19287	.648309	2.274524	.35169	4.09337	.632925	.2308	.65989
100.0	3.97484	.614596	2.492555	.38540	3.89054	.601562	.2564	.73321
110.0	3.76219	.581716	2.705204	.41828	3.69775	.571753	.2821	.80654
120.0	3.55492	.549669	2.912467	.45033	3.51452	.543421	.3077	.87986
130.0	3.35573	.518870	3.111657	.48113	3.34036	.516493	.3333	.95318
140.0	3.16462	.489320	3.302771	.51060	3.17484	.490899	.3590	1.02650
150.0	2.97889	.460602	3.488501	.53940	3.01752	.466574	.3846	1.09982
160.0	2.79854	.432716	3.668848	.56728	2.86799	.443454	.4103	1.17314
170.0	2.62358	.405663	3.843811	.59434	2.72587	.421480	.4359	1.24647
180.0	2.45669	.379858	4.010699	.62014	2.59080	.400594	.4615	1.31979
190.0	2.29788	.355302	4.169512	.64470	2.46242	.380744	.4872	1.39311
200.0	2.14445	.331579	4.322942	.66842	2.34040	.361877	.5128	1.46643
210.0	1.99640	.308688	4.470988	.69131	2.22443	.343945	.5385	1.53975
220.0	1.85643	.287045	4.610958	.71295	2.11420	.326901	.5641	1.61307
230.0	1.72454	.266651	4.742854	.73335	2.00943	.310703	.5897	1.68639
240.0	1.60072	.247506	4.866674	.75249	1.90986	.295306	.6154	1.75972
250.0	1.48497	.229609	4.982419	.77039	1.81522	.280673	.6410	1.83304
260.0	1.37730	.212961	5.090089	.78704	1.72527	.266765	.6667	1.90636
270.0	1.27771	.197562	5.189683	.80244	1.63978	.253546	.6923	1.97968
280.0	1.18350	.182994	5.283895	.81701	1.55853	.240982	.7179	2.05300
290.0	1.09736	.169676	5.370030	.83032	1.48130	.229041	.7436	2.12632
300.0	1.01930	.157606	5.448091	.84239	1.40789	.217691	.7692	2.19964
310.0	.94931	.146785	5.518076	.85322	1.33813	.206904	.7949	2.27297
320.0	.89010	.137628	5.577295	.86237	1.27182	.196651	.8205	2.34629
330.0	.83895	.129721	5.628438	.87028	1.20880	.186907	.8462	2.41961
340.0	.79319	.122645	5.674198	.87735	1.14890	.177645	.8718	2.49293
350.0	.75551	.116818	5.711882	.88318	1.09197	.168842	.8974	2.56625
360.0	.72590	.112240	5.741491	.88776	1.03786	.160476	.9231	2.63957
370.0	.70437	.108910	5.763025	.89109	.98643	.152524	.9487	2.71290
380.0	.69091	.106829	5.776484	.89317	.93755	.144966	.9744	2.78622
390.0	.68552	.105997	5.781868	.89400	.89109	.137782	1.0000	2.85954

TABLE D-13

EVAPORATION EXPERIMENT NO. GLF13 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	5.41467	1.000000	.000000	.00000	5.41467	1.000000	.0000	.00000
40.0	5.05545	.933657	.359228	.06634	5.02083	.927263	.0313	.10895
80.0	4.72323	.872301	.691447	.12770	4.65563	.859817	.0625	.21790
120.0	4.40451	.813440	1.010161	.18656	4.31699	.797277	.0938	.32685
160.0	4.09930	.757073	1.315370	.24293	4.00299	.739285	.1250	.43580
200.0	3.80760	.703200	1.607074	.29680	3.71182	.685512	.1563	.54475
240.0	3.52670	.651323	1.887975	.34868	3.44184	.635650	.1875	.65369
280.0	3.25660	.601440	2.158071	.39856	3.19149	.589415	.2188	.76264
320.0	2.99731	.553553	2.417363	.44645	2.95935	.546543	.2500	.87159
360.0	2.74882	.507661	2.665853	.49234	2.74410	.506789	.2813	.98054
400.0	2.51654	.464763	2.898136	.53524	2.54450	.469927	.3125	1.08949
440.0	2.30046	.424857	3.114213	.57514	2.35942	.435746	.3438	1.19844
480.0	2.09789	.387445	3.316785	.61255	2.18781	.404051	.3750	1.30739
520.0	1.91152	.353026	3.503152	.64697	2.02867	.374662	.4063	1.41634
560.0	1.74406	.322099	3.670612	.67790	1.88111	.347410	.4375	1.52529
600.0	1.59821	.295163	3.816464	.70484	1.74429	.322141	.4688	1.63424
640.0	1.47397	.272217	3.940708	.72778	1.61741	.298709	.5000	1.74319
680.0	1.36863	.252763	4.046046	.74724	1.49977	.276982	.5313	1.85214
720.0	1.27950	.236302	4.135178	.76370	1.39068	.256835	.5625	1.96108
760.0	1.20657	.222833	4.208104	.77717	1.28953	.238154	.5938	2.07003
800.0	1.14715	.211859	4.267525	.78814	1.19573	.220831	.6250	2.17898
840.0	1.09853	.202880	4.316143	.79712	1.10876	.204769	.6563	2.28793
880.0	1.05802	.195398	4.356657	.80460	1.02811	.189875	.6875	2.39688
920.0	1.02290	.188913	4.391769	.81109	.95333	.176064	.7188	2.50583
960.0	.99319	.183426	4.421480	.81657	.88399	.163257	.7500	2.61478
1000.0	.96888	.178937	4.445789	.82106	.81969	.151383	.7813	2.72373
1040.0	.94998	.175445	4.464696	.82455	.76007	.140372	.8125	2.83268
1080.0	.93647	.172951	4.478200	.82705	.70478	.130161	.8438	2.94163
1120.0	.92567	.170956	4.489005	.82904	.65352	.120694	.8750	3.05058
1160.0	.91487	.168960	4.499808	.83104	.60598	.111915	.9063	3.15953
1200.0	.90676	.167464	4.507912	.83254	.56191	.103775	.9375	3.26847
1240.0	.90136	.166466	4.513314	.83353	.52103	.096226	.9688	3.37742
1280.0	.89866	.165967	4.516015	.83403	.48314	.089227	1.0000	3.48637

TABLE D-14

EVAPORATION EXPERIMENT NO. GLF14 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.[illegible] MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 43%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.46739	1.000000	.000000	.00000	6.46739	1.000000	.0000	.00000
40.0	6.08648	.941102	.380916	.05890	6.03845	.933676	.0345	.09901
80.0	5.72224	.884784	.745148	.11522	5.63795	.871750	.0690	.19801
120.0	5.37191	.830615	1.095479	.16939	5.26402	.813932	.1034	.29702
160.0	5.03270	.778166	1.434689	.22183	4.91488	.759949	.1379	.39603
200.0	4.70461	.727436	1.762777	.27256	4.58891	.709545	.1724	.49503
240.0	4.39043	.678856	2.076962	.32114	4.28455	.662485	.2069	.59404
280.0	4.09015	.632426	2.377246	.36757	4.00038	.618546	.2414	.69305
320.0	3.80098	.587715	2.666409	.41229	3.73506	.577522	.2759	.79205
360.0	3.52294	.544724	2.944449	.45528	3.48733	.539218	.3103	.89106
400.0	3.25880	.503882	3.208587	.49612	3.25604	.503455	.3448	.99007
440.0	3.00857	.465190	3.458824	.53481	3.04008	.470063	.3793	1.08907
480.0	2.77223	.428648	3.695158	.57135	2.83845	.438887	.4138	1.18808
520.0	2.55258	.394685	3.914811	.60532	2.65019	.409778	.4483	1.28709
560.0	2.34961	.363301	4.117780	.63670	2.47442	.382600	.4828	1.38609
600.0	2.16332	.334497	4.304067	.66550	2.31031	.357224	.5172	1.48510
640.0	1.99372	.308273	4.473672	.69173	2.15708	.333531	.5517	1.58411
680.0	1.84358	.285057	4.623814	.71494	2.01401	.311410	.5862	1.68311
720.0	1.71290	.264852	4.754493	.73515	1.88043	.290756	.6207	1.78212
760.0	1.59612	.246795	4.871270	.75320	1.75571	.271472	.6552	1.88113
800.0	1.49325	.230888	4.974145	.76911	1.63927	.253467	.6897	1.98013
840.0	1.40427	.2[illegible]131	5.063118	.78287	1.53054	.236656	.7241	2.07914
880.0	1.32642	.205094	5.140970	.79491	1.42903	.220960	.7586	2.17815
920.0	1.26525	.195636	5.202138	.80436	1.33425	.206305	.7931	2.27715
960.0	1.22355	.189187	5.243845	.81081	1.24576	.192622	.8276	2.37616
1000.0	1.19296	.184458	5.274429	.81554	1.16314	.179846	.8621	2.47516
1040.0	1.16516	.180159	5.302233	.81984	1.08599	.167918	.8966	2.57417
1080.0	1.14291	.176720	5.324476	.82328	1.01396	.156781	.9310	2.67318
1120.0	1.12901	.174570	5.338378	.82543	.94671	.146383	.9655	2.77218
1160.0	1.12345	.173710	5.343939	.82629	.88392	.136674	1.0000	2.87119

TABLE D-15

EVAPORATION EXPERIMENT NO. GLF15 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	5.67880	1.000000	.000000	.00000	5.67880	1.000000	.0000	.00000
15.0	5.34049	.940426	.338311	.05957	5.[illegible]9789	.932923	.0323	.10017
30.0	5.01829	.883688	.660512	.11631	4.94253	.870346	.0645	.20034
45.0	4.70817	.829078	.970630	.17092	4.61100	.811966	.0968	.30051
60.0	4.41014	.776596	1.268666	.22340	4.30171	.757502	.1290	.40068
75.0	4.12419	.726242	1.554619	.27376	4.01316	.706692	.1613	.50085
90.0	3.84629	.677306	1.832517	.32269	3.74397	.659289	.1935	.60102
105.0	3.57644	.629788	2.102360	.37021	3.49284	.615066	.2258	.70119
120.0	3.31868	.584398	2.360121	.41560	3.25855	.573810	.258[illegible]	.80136
135.0	3.07301	.541136	2.605799	.45886	3.03998	.535321	.2903	.90153
150.0	2.83538	.499292	2.843422	.50071	2.83607	.499413	.3226	1.00169
165.0	2.60984	.459576	3.068963	.54042	2.64584	.465914	.3548	1.10186
180.0	2.39638	.421987	3.282421	.57801	2.46836	.434662	.3871	1.20203
195.0	2.19098	.385817	3.487823	.61418	2.30279	.405507	.4194	1.30220
210.0	1.99363	.351066	3.685171	.64893	2.14833	.378307	.4516	1.40237
225.0	1.80837	.318442	3.870437	.68156	2.00423	.352931	.4839	1.50254
240.0	1.63921	.288654	4.039592	.71135	1.86979	.329258	.5161	1.60271
255.0	1.48617	.261704	4.192637	.73830	1.74437	.307172	.5484	1.70288
270.0	1.34923	.237591	4.329573	.76241	1.62736	.286568	.5806	1.80305
285.0	1.22841	.21631[illegible]	4.450398	.78369	1.51821	.267346	.6129	1.90322
300.0	1.12[illegible]69	.197875	4.555114	.80213	1.41637	.249413	.6452	2.00339
315.0	1.03509	.182272	4.643719	.81773	1.32136	.232684	.6774	2.10356
330.0	.96[illegible]	.169506	4.716214	.83049	1.23273	.217076	.7097	2.20373
345.0	.90621	.159577	4.7725[illegible]	.84042	1.15004	.202515	.7419	2.30390
360.0	.85190	[illegible]	4.81690[illegible]	.84822	1.07290	.188931	.7742	2.40407
375.0	.82566	.14[illegible]392	4.853149	.85461	1.00094	.176258	.8065	2.50424
390.0	[illegible]746	.140[illegible]28	4.881342	.85957	.93380	.164436	.8387	2.60441
405.0	.77732	.136882	4.901[illegible]	.86312	.87116	.153406	.8710	2.70458
420.0	.76524	.134754	[illegible]	.86525	.81273	.143116	.9032	2.80474
435.0	.75719	.133336	[illegible]	.86666	.75821	.133516	.9355	2.90491
450.0	.749[illegible]	.131917	[illegible]929673	.86808	.70735	.124560	.9677	3.00508
465.0	[illegible]	.131208	4.933760	.86879	.65991	.116205	1.0000	3.10525

TABLE D-16

EVAPORATION EXPERIMENT NO. GLF16 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.20870	1.000000	.000000	.00000	6.20870	1.000000	.0000	.00000
15.0	5.86534	.944697	.343360	.05530	5.82395	.938032	.0345	.09229
30.0	5.53833	.892027	.670370	.10797	5.46306	.879905	.0690	.18458
45.0	5.22358	.841333	.985117	.15867	5.12453	.825379	.1034	.27687
60.0	4.92109	.792613	1.287601	.20739	4.80697	.774232	.1379	.36916
75.0	4.63087	.745869	1.577822	.25413	4.50910	.726255	.1724	.46145
90.0	4.34883	.700441	1.859868	.29956	4.22968	.681251	.2069	.55374
105.0	4.07496	.656331	2.133739	.34367	3.96757	.639035	.2414	.64603
120.0	3.80926	.613537	2.399434	.38646	3.72171	.599436	.2759	.73832
135.0	3.55174	.572059	2.656954	.42794	3.49109	.562290	.3103	.83061
150.0	3.30240	.531899	2.906299	.46810	3.27475	.527446	.3448	.92290
165.0	3.06531	.493713	3.143381	.50629	3.07182	.494762	.3793	1.01519
180.0	2.83641	.456844	3.372288	.54316	2.88147	.464102	.4138	1.10749
195.0	2.61568	.421292	3.593019	.57871	2.70291	.435343	.4483	1.19978
210.0	2.40721	.387716	3.801488	.61228	2.53542	.408366	.4828	1.29207
225.0	2.20691	.355455	4.001782	.64454	2.37831	.383060	.5172	1.38436
240.0	2.01888	.325170	4.189812	.67483	2.23093	.359323	.5517	1.47665
255.0	1.84312	.296860	4.365580	.70314	2.09268	.337057	.5862	1.56894
270.0	1.67552	.269867	4.533172	.73013	1.96300	.316170	.6207	1.66123
285.0	1.52019	.244849	4.688502	.75515	1.84136	.296578	.6552	1.75352
300.0	1.38121	.222465	4.827481	.77754	1.72725	.278199	.6897	1.84581
315.0	1.25859	.202713	4.950110	.79729	1.62022	.260960	.7241	1.93810
330.0	1.15231	.185596	5.056388	.81440	1.51982	.244789	.7586	2.03039
345.0	1.06647	.171770	5.142228	.82823	1.42564	.229620	.7931	2.12268
360.0	1.00107	.161236	5.207630	.83876	1.33730	.215391	.8276	2.21497
375.0	.95201	.153336	5.256681	.84666	1.25443	.202044	.8621	2.30726
390.0	.91931	.148069	5.289383	.85193	1.17669	.189524	.8966	2.39955
405.0	.89887	.144777	5.309821	.85522	1.10378	.177779	.9310	2.49184
420.0	.88661	.142802	5.322084	.85720	1.03538	.166763	.9655	2.58413
435.0	.88252	.142143	5.326171	.85786	.97122	.156429	1.0000	2.67642

TABLE D-17

EVAPORATION EXPERIMENT NO. BLF1 SERIES 10 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.33913	1.000000	.000000	.00000	6.33913	1.000000	.0000	.00000
45.0	5.84030	.921310	.498829	.07869	5.78230	.912160	.0370	.13264
90.0	5.37120	.847309	.967927	.15269	5.27439	.832036	.0741	.26528
135.0	4.92523	.776957	1.413900	.22304	4.81109	.758951	.1111	.39792
180.0	4.49908	.709731	1.840052	.29027	4.38848	.692285	.1481	.53056
225.0	4.09275	.645632	2.246384	.35437	4.00300	.631474	.1852	.66320
270.0	3.70954	.585181	2.629590	.41482	3.65138	.576006	.2222	.79584
315.0	3.34946	.528378	2.989672	.47162	3.33064	.525410	.2593	.92849
360.0	3.01581	.475744	3.323325	.52426	3.03808	.479258	.2963	1.06113
405.0	2.71188	.427800	3.627248	.57220	2.77121	.437160	.3333	1.19377
450.0	2.43769	.384547	3.901439	.61545	2.52779	.398760	.3704	1.32641
495.0	2.19323	.345983	4.145898	.65402	2.30575	.363733	.4074	1.45905
540.0	1.97850	.312110	4.360626	.68789	2.10321	.331783	.4444	1.59169
585.0	1.79681	.283448	4.542319	.71655	1.91847	.302639	.4815	1.72433
630.0	1.64485	.259476	4.694280	.74052	1.74995	.276055	.5185	1.85697
675.0	1.52262	.240194	4.816510	.75981	1.59624	.251807	.5556	1.98961
720.0	1.42682	.225081	4.912312	.77492	1.45602	.229688	.5926	2.12225
765.0	1.35414	.213616	4.984988	.78638	1.32813	.209512	.6296	2.25489
810.0	1.30129	.205278	5.037844	.79472	1.21146	.191109	.6667	2.38753
855.0	1.26495	.199546	5.074183	.80045	1.10505	.174322	.7037	2.52017
900.0	1.24182	.195898	5.097308	.80410	1.00798	.159010	.7407	2.65281
945.0	1.22531	.193292	5.113825	.80671	.91944	.145042	.7778	2.78546
990.0	1.21209	.191208	5.127039	.80879	.83868	.132302	.8148	2.91810
1035.0	1.20218	.189644	5.136950	.81036	.76501	.120680	.8519	3.05074
1080.0	1.19557	.188602	5.143557	.81140	.69781	.110080	.8889	3.18338
1125.0	1.18897	.187560	5.150164	.81244	.63652	.100410	.9259	3.31602
1170.0	1.18236	.186518	5.156770	.81348	.58060	.091590	.9630	3.44866
1215.0	1.17906	.185997	5.160073	.81400	.52960	.083545	1.0000	3.58130

TABLE D-18

EVAPORATION EXPERIMENT NO. BLF2 SERIES 1D 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.46739	1.000000	.000000	.00000	6.46739	1.000000	.0000	.00000
40.0	5.99055	.926270	.476838	.07373	5.92252	.915750	.0313	.12697
80.0	5.53852	.856376	.928869	.14362	5.42355	.838599	.0625	.25395
120.0	5.10578	.789466	1.361607	.21053	4.96661	.767947	.0938	.38092
160.0	4.68958	.725112	1.777807	.27489	4.54818	.703248	.1250	.50790
200.0	4.28992	.663316	2.177469	.33668	4.16500	.643999	.1563	.63487
240.0	3.90680	.604076	2.560593	.39592	3.81410	.589742	.1875	.76184
280.0	3.54021	.547394	2.927179	.45261	3.49276	.540057	.2188	.88882
320.0	3.19016	.493269	3.277228	.50673	3.19849	.494557	.2500	1.01579
360.0	2.85665	.441701	3.610739	.55830	2.92902	.452891	.2813	1.14276
400.0	2.53968	.392690	3.927713	.60731	2.68225	.414735	.3125	1.26974
440.0	2.24200	.346662	4.225392	.65334	2.45627	.379794	.3438	1.39671
480.0	1.96361	.303618	4.503777	.69638	2.24933	.347796	.3750	1.52369
520.0	1.70452	.263557	4.762868	.73644	2.05983	.318494	.4063	1.65066
560.0	1.47024	.227331	4.997153	.77267	1.88629	.291661	.4375	1.77763
600.0	1.26076	.194941	5.206631	.80506	1.72737	.267089	.4688	1.90461
640.0	1.07333	.165961	5.394059	.83404	1.58184	.244587	.5000	2.03158
680.0	.90795	.140390	5.559436	.85961	1.44857	.223980	.5313	2.15856
720.0	.76463	.118228	5.702763	.88177	1.32653	.205110	.5625	2.28553
760.0	.64335	.099476	5.824040	.90052	1.21477	.187830	.5938	2.41250
8[illegible]	.54137	.083707	5.926023	.91629	1.11242	.172005	.6250	2.53948
840.0	.45592	.070496	6.011468	.92950	1.01870	.157514	.6563	2.66645
880.0	.38426	.059415	6.083132	.94059	.93288	.144243	.6875	2.79342
920.0	.32638	.050465	6.141013	.94953	.85428	.132091	.7188	2.92040
960.0	.27952	.043220	6.187871	.95678	.78231	.120962	.7500	3.04737
1000.0	.24093	.037253	6.226458	.96275	.71640	.110771	.7813	3.17435
1040.0	.21337	.032992	6.254021	.96701	.65604	.101439	.8125	3.30132
1080.0	.19408	.030008	6.273315	.96999	.60077	.09[illegible]893	.8438	3.42829
1120.0	.18029	.027878	6.287097	.97212	.55016	.085066	.8750	3.55527
1160.0	.16927	.026173	6.298122	.97383	.50381	.077900	.9063	3.68224
1200.0	.16100	.024894	6.306391	.97511	.46136	.071337	.9375	3.80921
1240.0	.15549	.024042	6.311904	.97596	.42249	.065326	.9688	3.93619
1280.0	.15273	.023616	6.314660	.97638	.38690	.059[illegible]3	1.0000	4.06316

TABLE D-19

EVAPORATION EXPERIMENT NO. 8L5I SERIES TO 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.2 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.33913	1.000000	.000000	.00000	6.33913	1.000000	.0000	.00000
15.0	5.93133	.935670	.407799	.06433	5.89171	.929419	.0333	.10560
30.0	5.54372	.874524	.795410	.12548	5.47587	.863820	.0667	.21120
45.0	5.17630	.816563	1.162834	.18344	5.00938	.802851	.1000	.31680
60.0	4.82906	.761786	1.510069	.23821	4.73017	.746185	.1333	.42239
75.0	4.49354	.708921	1.845191	.29108	4.39631	.693519	.1667	.52799
90.0	4.17073	.657966	2.168200	.34203	4.08601	.644570	.2000	.63359
105.0	3.86407	.609559	2.475059	.39044	3.79762	.599075	.2333	.73919
120.0	3.57336	.563399	2.765768	.43630	3.52953	.556793	.2667	.84479
135.0	3.29477	.519751	3.044363	.48025	3.28046	.517494	.3000	.95039
150.0	3.02025	.477773	3.318843	.52229	3.04892	.480969	.3333	1.05598
165.0	2.77392	.437586	3.565216	.56241	2.83373	.447022	.3667	1.16158
180.0	2.55166	.399376	3.807472	.60063	2.63372	.415471	.4000	1.26718
195.0	2.30555	.363702	4.033579	.63630	2.44783	.386146	.4333	1.37278
210.0	2.09560	.330581	4.243535	.66942	2.27506	.358892	.4667	1.47838
225.0	1.90179	.300008	4.437341	.69999	2.11449	.333561	.5000	1.58398
240.0	1.72817	.272620	4.610959	.72738	1.96525	.310018	.5333	1.68958
255.0	1.57474	.248416	4.764388	.75158	1.82654	.288137	.5667	1.79517
270.0	1.43746	.226760	4.901667	.77324	1.69762	.267800	.6000	1.90077
285.0	1.31634	.207652	5.022796	.79235	1.57780	.248898	.6333	2.00637
300.0	1.21136	.191092	5.127773	.80891	1.46644	.231331	.6667	2.11197
315.0	1.12253	.177079	5.216601	.82292	1.36294	.215003	.7000	2.21757
330.0	1.04985	.165615	5.289278	.83439	1.26674	.199828	.7333	2.32317
345.0	.99333	.156698	5.345805	.84330	1.17733	.185724	.7667	2.42877
360.0	.95295	.150328	5.386181	.84967	1.09423	.172616	.8000	2.53436
375.0	.92469	.145870	5.414444	.85413	1.01700	.160432	.8333	2.63996
390.0	.90450	.142685	5.434632	.85732	.94522	.149109	.8667	2.74556
405.0	.88835	.140137	5.450783	.85986	.87851	.138585	.9000	2.85116
420.0	.87624	.138226	5.462895	.86177	.81650	.128803	.9333	2.95676
435.0	.86816	.136953	5.470971	.86305	.75887	.119712	.9667	3.06236
450.0	.86412	.136316	5.475008	.86368	.70531	.111263	1.0000	3.16795

TABLE D-20

EVAPORATION EXPERIMENT NO. BLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 20%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.72609	1.000000	.000000	.00000	6.72609	1.000000	.0000	.00000
20.0	6.18235	.919161	.543732	.08084	6.08267	.904340	.0357	.14506
40.0	5.65477	.840723	1.071314	.15928	5.50080	.817830	.0714	.29013
60.0	5.14872	.765486	1.577362	.23451	4.97459	.739596	.1071	.43519
80.0	4.65883	.692650	2.067260	.30735	4.49872	.668846	.1429	.58025
100.0	4.18508	.622216	2.541007	.37778	4.06837	.604864	.1786	.72532
120.0	3.73825	.555784	2.987836	.44422	3.67919	.547003	.2143	.87038
140.0	3.31834	.493353	3.407748	.50665	3.32723	.494676	.2500	1.01544
160.0	2.91996	.434125	3.806127	.56588	3.00895	.447355	.2857	1.16051
180.0	2.54312	.378097	4.182971	.62190	2.72111	.404561	.3214	1.30557
200.0	2.19319	.326072	4.532897	.67393	2.46081	.365861	.3571	1.45063
220.0	1.87018	.278049	4.855906	.72195	2.22541	.330862	.3929	1.59570
240.0	1.57409	.234027	5.151999	.76597	2.01252	.299212	.4286	1.74076
260.0	1.30491	.194008	5.421173	.80599	1.82001	.270589	.4643	1.88582
280.0	1.06266	.157990	5.663430	.84201	1.64590	.244704	.5000	2.03089
300.0	.85270	.126775	5.873386	.87322	1.48846	.221296	.5357	2.17595
320.0	.67505	.100362	6.051042	.89964	1.34607	.200127	.5714	2.32101
340.0	.52969	.078752	6.196396	.92125	1.21730	.180982	.6071	2.46608
360.0	.41664	.061944	6.309449	.93806	1.10086	.163670	.6429	2.61114
380.0	.33589	.049938	6.390201	.95006	.99555	.148013	.6786	2.75620
400.0	.28205	.041934	6.444036	.95807	.90031	.133854	.7143	2.90127
420.0	.24437	.036331	6.481721	.96367	.81419	.121049	.7500	3.04633
440.0	.21745	.032329	6.508638	.96767	.73630	.109470	.7857	3.19140
460.0	.19591	.029128	6.530172	.97087	.66587	.098998	.8214	3.33646
480.0	.17976	.026726	6.546322	.97327	.60217	.089528	.8571	3.48152
500.0	.16900	.025126	6.557089	.97487	.54457	.080963	.8929	3.62659
520.0	.15823	.023525	6.567857	.97648	.49247	.073218	.9286	3.77165
540.0	.14746	.021924	6.578624	.97808	.44536	.066214	.9643	3.91671
560.0	.14208	.021124	6.584008	.97888	.40276	.059880	1.0000	4.06178

TABLE D-21

EVAPORATION EXPERIMENT NO. BL55 SERIES 10 2**6 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIVES
.0	6.07500	1.000000	.000000	.00000	6.07500	1.000000	.0000	.00000
30.0	5.74245	.945259	.332553	.05474	5.71518	.940771	.0263	.08808
60.0	5.43632	.894868	.638678	.10513	5.37668	.885050	.0526	.17517
90.0	5.14561	.847015	.929386	.15299	5.05823	.832630	.0789	.26425
120.0	4.86371	.800611	1.211285	.19939	4.75863	.783314	.1053	.35234
150.0	4.59063	.755659	1.484375	.24434	4.47678	.736919	.1316	.44042
180.0	4.32414	.711793	1.750858	.28821	4.21163	.693272	.1579	.52851
210.0	4.06427	.669015	2.010733	.33098	3.96218	.652210	.1842	.61659
240.0	3.81320	.627687	2.261800	.37231	3.72750	.613581	.2105	.70467
270.0	3.57094	.587810	2.504057	.41219	3.50673	.577239	.2368	.79276
300.0	3.33750	.549262	2.737504	.45062	3.29903	.543050	.2632	.88084
330.0	3.11286	.512404	2.962143	.48760	3.10363	.510886	.2895	.96893
360.0	2.89923	.477240	3.175769	.52276	2.91980	.480626	.3158	1.05701
390.0	2.69882	.444250	3.376182	.55575	2.74687	.452159	.3421	1.14510
420.0	2.51162	.413435	3.563380	.58656	2.58617	.425378	.3684	1.23318
450.0	2.33764	.384796	3.737365	.61520	2.43112	.400184	.3947	1.32127
480.0	2.17686	.358332	3.898135	.64167	2.28712	.376481	.4211	1.40935
510.0	2.02931	.334042	4.045692	.66596	2.15166	.354183	.4474	1.49743
540.0	1.89276	.311566	4.182237	.68843	2.02422	.333205	.4737	1.58552
570.0	1.76723	.290902	4.307770	.70910	1.90433	.313470	.5000	1.67360
600.0	1.65491	.272413	4.420089	.72759	1.79154	.294903	.5263	1.76169
630.0	1.55581	.256100	4.519194	.74390	1.68543	.277436	.5526	1.84977
660.0	1.46991	.241961	4.605085	.75804	1.58560	.261004	.5789	1.93786
690.0	1.39724	.229998	4.677762	.77000	1.49169	.245545	.6053	2.02594
720.0	1.33777	.220210	4.737225	.77979	1.40333	.231002	.6316	2.11402
750.0	1.28932	.212234	4.785677	.78777	1.32022	.217320	.6579	2.20211
780.0	1.24748	.205346	4.827521	.79465	1.24202	.204448	.6842	2.29019
810.0	1.21004	.199185	4.864961	.80082	1.16846	.192339	.7105	2.37828
840.0	1.17700	.193746	4.897996	.80625	1.09925	.180947	.7368	2.46636
870.0	1.14837	.189033	4.926626	.81097	1.03416	.170230	.7632	2.55445
900.0	1.12415	.185045	4.950852	.81496	.97289	.160147	.7895	2.64253
930.0	1.10653	.182149	4.968471	.81786	.91527	.150662	.8158	2.73062
960.0	1.09332	.179970	4.981685	.82003	.86106	.141733	.8421	2.81870
990.0	1.08010	.177794	4.994899	.82221	.81006	.133343	.8684	2.90678
1020.0	1.06909	.175982	5.005910	.82402	.76208	.125445	.8947	2.99487
1050.0	1.06028	.174532	5.014720	.82547	.71694	[illegible]	.9211	3.08295
1080.0	1.05367	.173444	5.021327	.82656	.67448	.111025	.9474	3.17104
1110.0	1.04927	.172719	5.025731	.82728	.63453	.104450	.9737	3.25912
1140.0	1.04707	.172357	5.027934	.82764	.59695	.098263	1.0000	3.34721

TABLE D-22

EVAPORATION EXPERIMENT NO. 8LF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.33804	1.000000	.000000	.00000	6.33804	1.000000	.0000	.00000
40.0	5.83103	.927894	.457009	.07211	5.80431	.915789	.0323	.12691
80.0	5.43822	.858028	.899826	.14197	5.31553	.838670	.0645	.25382
120.0	5.01243	.790849	1.325611	.20915	4.86791	.768046	.0968	.38074
160.0	4.60368	.726357	1.734364	.27364	4.45798	.703368	.1290	.50765
200.0	4.20912	.664104	2.128925	.33590	4.08257	.644137	.1613	.63456
240.0	3.83159	.604538	2.506455	.39546	3.73877	.589894	.1935	.76147
280.0	3.47109	.547660	2.866953	.45234	3.42393	.540219	.2258	.88838
320.0	3.12762	.493468	3.210419	.50653	3.13560	.494727	.2581	1.01530
360.0	2.80119	.441964	3.536855	.55804	2.87155	.453065	.2903	1.14221
400.0	2.49179	.393147	3.846258	.60685	2.62973	.414913	.3226	1.26912
440.0	2.20225	.347466	4.135792	.65253	2.40828	.379973	.3548	1.39603
480.0	1.93826	.305814	4.399779	.69419	2.20548	.347975	.3871	1.52294
520.0	1.70266	.268642	4.635380	.73136	2.01976	.318672	.4194	1.64986
560.0	1.49261	.235500	4.845434	.76450	1.84967	.291836	.4516	1.77677
600.0	1.30810	.206389	5.029941	.79361	1.69391	.267261	.4839	1.90368
640.0	1.15198	.181757	5.186061	.81824	1.55126	.244754	.5161	2.03059
680.0	1.02425	.161603	5.313797	.83840	1.42063	.224144	.5484	2.15751
720.0	.91922	.145032	5.418825	.85497	1.30100	.205268	.5806	2.28442
760.0	.83122	.131148	5.506820	.86885	1.19144	.187983	.6129	2.41133
800.0	.75742	.119504	5.580623	.88050	1.09111	.172152	.6452	2.53824
840.0	.69497	.109651	5.643071	.89035	.99923	.157655	.6774	2.66515
880.0	.64388	.101589	5.694165	.89841	.91508	.144379	.7097	2.79207
920.0	.60130	.094872	5.736744	.90513	.83802	.132221	.7419	2.91898
960.0	.56440	.089049	5.773644	.91095	.76745	.121087	.7742	3.04589
1000.0	.53317	.084123	5.804869	.91588	.70282	.110890	.8065	3.17280
1040.0	.50763	.080092	5.830416	.91991	.64364	.101552	.8387	3.29971
1080.0	.48776	.076957	5.850286	.92304	.58944	.093000	.8710	3.42663
1120.0	.47356	.074718	5.864479	.92528	.53980	.085168	.9032	3.55354
1160.0	.46221	.072926	5.875834	.92707	.49434	.077996	.9355	3.68045
1200.0	.45369	.071583	5.884349	.92842	.45272	.071428	.9677	3.80736
1240.0	.45086	.071135	5.887188	.92887	.41459	.065413	1.0000	3.93427

TABLE D-23

EVAPORATION EXPERIMENT NO. BLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	5.81087	1.000000	.000000	.00000	5.81087	1.000000	.0000	.00000
15.0	5.45960	.939549	.351273	.06045	5.41005	.931023	.0294	.10311
30.0	5.12044	.881183	.690432	.11882	5.03688	.866803	.0588	.20622
45.0	4.79339	.824901	1.017480	.17510	4.68945	.807014	.0882	.30934
60.0	4.47442	.770008	1.336451	.22999	4.36599	.751348	.1176	.41245
75.0	4.16756	.717201	1.643310	.28280	4.06483	.699522	.1471	.51556
90.0	3.87685	.667172	1.934018	.33283	3.78445	.651271	.1765	.61867
105.0	3.59826	.61[illegible]28	2.212614	.38077	3.52341	.606348	.2059	.72178
120.0	3.33177	.573369	2.479097	.42663	3.28037	.564524	.2353	.82489
135.0	3.07740	.529594	2.733467	.47041	3.05410	.525585	.2647	.92801
150.0	2.83111	.487209	2.979761	.51279	2.84344	.489331	.2941	1.03112
165.0	2.59693	.446908	3.213943	.55309	2.64731	.455578	.3235	1.13423
180.0	2.37486	.408692	3.436012	.59131	2.46470	.424154	.3529	1.23734
195.0	2.16490	.372561	3.645968	.62744	2.29469	.394897	.3824	1.34045
210.0	1.97110	.339208	3.839774	.66079	2.13641	.367658	.4118	1.44356
225.0	1.79344	.308636	4.017428	.69136	1.98905	.342298	.4412	1.54668
240.0	1.63194	.280842	4.178934	.71916	1.85185	.318687	.4706	1.64979
255.0	1.49062	.256523	4.320250	.74348	1.72411	.296705	.5000	1.75290
270.0	1.36949	.235677	4.441379	.76432	1.60519	.276239	.5294	1.85601
285.0	1.26048	.216917	4.550395	.78308	1.49447	.257185	.5588	1.959[illegible]2
300.0	1.16357	.200241	4.647297	.79976	1.39138	.239445	.5882	2.06223
315.0	1.08282	.186344	4.728050	.81366	1.29541	.222929	.6176	2.16535
330.0	1.01418	.174532	4.796689	.82547	1.20606	.207552	.6471	2.26846
345.0	.95362	.164109	4.857253	.83589	1.12287	.193235	.6765	2.37157
360.0	.90113	.155076	4.909742	.84492	1.04541	.179907	.7059	2.47468
375.0	.85671	.147433	4.954156	.85257	.97330	.167497	.7353	2.57779
390.0	.82038	.141179	4.990495	.85882	.90617	.155944	.7647	2.68090
405.0	.79211	.136316	5.018758	.86368	.84366	.145187	.7941	2.78402
420.0	.76789	.132146	5.042984	.86785	.78547	.135172	.8235	2.88713
435.0	.74770	.128672	5.063172	.87133	.73129	.125849	.8529	2.99024
450.0	.73155	.125893	5.079322	.87411	.68085	.1[illegible]7168	.8824	3.09335
465.0	.71943	.123808	5.091435	.87619	.63388	.109086	.9118	3.19646
480.0	.71136	.122419	5.099511	.87758	.59016	.101562	.9412	3.29957
495.0	.70328	.121029	5.107586	.87897	.54945	.094556	.9706	3.40269
510.0	.69925	.120334	5.111623	.87967	.51155	.088034	1.0000	3.50580

TABLE D-24

EVAPORATION EXPERIMENT NO. BLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

EVAPORATION HISTORY OF TEST DROPLET MEASURED AND THEORETICAL

	EXPERIMENTAL EVAPORATION DATA				THEORETICAL HALF LIFE MODEL DATA			
TIME	RESIDUAL MASS		CUMULATIVE MASS		MASS	MASS	TIME	TIME
MINUTES	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	MILLIGRAMS	FRACTIONAL	FRACTIONAL	HALF-LIFES
.0	6.59674	1.000000	.000000	.00000	6.59674	1.000000	.0000	.00000
15.0	6.20679	.940887	.389952	.05911	6.15493	.933026	.0313	.10001
30.0	5.83275	.884187	.763988	.11581	5.74271	.870538	.0625	.20002
45.0	5.47463	.829900	1.122106	.17010	5.35810	.812234	.0938	.30003
60.0	5.13243	.778025	1.464309	.22197	4.99924	.757836	.1250	.40004
75.0	4.80216	.727960	1.794575	.27204	4.66442	.707080	.1563	.50005
90.0	4.47986	.679102	2.116881	.32090	4.35203	.659724	.1875	.60006
105.0	4.16949	.632053	2.427252	.36795	4.06056	.615540	.2188	.70008
120.0	3.87106	.586813	2.725684	.41319	3.78861	.574315	.2500	.80009
135.0	3.58058	.542780	3.016158	.45722	3.53487	.535851	.2813	.90010
150.0	3.29806	.499954	3.298674	.50005	3.29812	.499963	.3125	1.00011
165.0	3.02351	.458334	3.573232	.54167	3.07723	.466478	.3438	1.10012
180.0	2.75691	.417920	3.839832	.58208	2.87114	.435236	.3750	1.20013
195.0	2.49827	.378712	4.098474	.62129	2.67885	.406087	.4063	1.30014
210.0	2.25156	.341314	4.345178	.65869	2.49943	.378889	.4375	1.40015
225.0	2.01679	.305726	4.579945	.69427	2.33204	.353514	.4688	1.50016
240.0	1.79396	.271947	4.802774	.72805	2.17585	.329838	.5000	1.60017
255.0	1.58307	.239978	5.013667	.76002	2.03013	.307747	.5313	1.70018
270.0	1.38014	.209215	5.216601	.79078	1.89416	.287136	.5625	1.80019
285.0	1.19710	.181468	5.399640	.81853	1.76730	.267905	.5938	1.90020
300.0	1.03794	.157341	5.558804	.84266	1.64894	.249963	.6250	2.00022
315.0	.89469	.135626	5.702052	.86437	1.53850	.233222	.6563	2.10023
330.0	76736	.116324	5.829382	.88368	1.43546	.217602	.6875	2.20024
345.0	.65594	.099434	5.940797	.90057	1.33932	.203028	.7188	2.30025
360.0	.56044	.084958	6.036296	.91504	1.24962	.189431	.7500	2.40026
375.0	.48086	.072894	6.115878	.92711	1.16593	.176744	.7813	2.50027
390.0	.41720	.063243	6.179543	.93676	1.08784	.164906	.8125	2.60028
405.0	.36945	.056004	6.227293	.94400	1.01499	.153862	.8438	2.70029
420.0	.33363	.050576	6.263104	.94942	.94701	.143557	.8750	2.80030
435.0	.30976	.046956	6.286979	.95304	.88358	.133963	.9063	2.90031
450.0	.29782	.045147	6.298917	.95485	.82441	.124972	.9375	3.00032
465.0	.28986	.043940	6.306875	.95606	.76919	.116602	.9688	3.10033
480.0	.28589	.043337	6.310854	.95666	.71768	.108793	1.0000	3.20035

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APPENDIX E

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

TABLE E-1

EVAPORATION EXPERIMENT NO. GLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 45%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************* TIME	*************		***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
30.0	.0345	.12187	-17.91234	-19.61007
60.0	.0690	.24374	-15.93023	-19.04545
90.0	.1034	.36561	-14.16837	-18.44951
120.0	.1379	.48747	-12.92038	-18.31362
150.0	.1724	.60934	-11.81920	-18.22875
180.0	.2069	.73121	-10.64463	-17.83216
210.0	.2414	.85308	-9.61686	-17.47077
240.0	.2759	.97495	-8.80934	-17.34543
270.0	.3103	1.09682	-7.92842	-16.88488
300.0	.3448	1.21869	-7.12088	-16.36456
330.0	.3793	1.34055	-6.38678	-15.79822
360.0	.4138	1.46242	-5.65268	-14.99577
390.0	.4483	1.58429	-4.99197	-14.14859
420.0	.4828	1.70616	-4.40466	-13.28563
450.0	.5172	1.82803	-3.74397	-11.94478
480.0	.5517	1.94990	-3.08327	-10.32788
510.0	.5862	2.07177	-2.4[illegible]598	-8.71274
540.0	.6207	2.19364	-1.98211	-7.[illegible]5835
570.0	.6552	2.31550	-1.61505	-6.00190
600.0	.6897	2.43737	-1.3[illegible]	-5.0300[illegible]
630.0	.7241	2.55924	-1.1[illegible]	-3.[illegible]768
660.0	.7586	2.68111	[illegible]	-3.18131
690.0	.7931	2.80298	[illegible]	-2.63610
720.0	.8276	2.92485	[illegible]1387	-2.07077
750.0	.8621	3.04672	[illegible]6706	-1.68[illegible]
780.0	.8966	3.16858	[illegible]	[illegible]
810.0	.9310	3.29045	[illegible]	[illegible]
840.0	.9655	3.41232	[illegible]	[illegible]576
870.0	1.0000	3.53419	[illegible]	[illegible]233

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-2

EVAPORATION EXPERIMENT NO. GLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	*************		***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
30.0	.0294	.11354	-16.00364	-17.28695
60.0	.0588	.22708	-14.82906	-17.30391
90.0	.0882	.34063	-13.72791	-17.30485
120.0	.1176	.45417	-12.77354	-17.40154
150.0	.1471	.56771	-11.96602	-17.63494
180.0	.1765	.68125	-11.15852	-17.80293
210.0	.2059	.79479	-10.35098	-17.88458
240.0	.2353	.90833	-9.69027	-18.15285
270.0	.2647	1.02188	-9.02958	-18.35541
300.0	.2941	1.13542	-8.29547	-18.29410
330.0	.3235	1.24896	-7.63477	-18.26344
360.0	.3529	1.36250	-7.04748	-18.28878
390.0	.3824	1.47604	-6.46019	-18.17836
420.0	.4118	1.58958	-5.87290	-17.89777
450.0	.4412	1.70313	-5.28560	-17.40876
480.0	.4706	1.81667	-4.69831	-16.67109
510.0	.5000	1.93021	-4.11103	-15.64594
540.0	.5294	2.04375	-3.52374	-14.30041
570.0	.5588	2.15729	-3.00987	-12.94863
600.0	.5882	2.27083	-2.56939	-11.65109
630.0	.6176	2.38438	-2.12894	-10.10639
660.0	.6471	2.49792	-1.76186	-8.70142
690.0	.6765	2.61146	-1.54163	-7.89245
720.0	.7059	2.72500	-1.32141	-6.98422
750.0	.7353	2.83854	-1.10117	-5.98163
780.0	.7647	2.95208	-1.02775	-5.7312[illegible]
810.0	.7941	3.06563	-.95435	-5.45663
840.0	.8235	3.17917	-.80751	-4.71813
870.0	.8529	3.29271	-.66070	-3.93070
900.0	.8824	3.40625	-.5[illegible]368	-3.10119
930.0	.9118	3.51979	-.36706	-2.23817
960.0	.9412	3.63333	-.22022	-1.35119
990.0	.9706	3.74688	-.14682	.90463
1020.0	1.0000	3.86042	-.07341	-.45328

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-3

EVAPORATION EXPERIMENT NO. GLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	**************		***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
15.0	.0417	.17906	-43.33708	-49.09026
30.0	.0833	.35811	-37.95360	-48.64809
45.0	.1250	.53717	-33.64632	-48.82185
60.0	.1667	.71622	-29.87836	-49.11170
75.0	.2083	.89528	-26.37908	-49.11948
90.0	.2500	1.07433	-23.41818	-49.43577
105.0	.2917	1.25339	-20.72644	-49.62528
120.0	.3333	1.43244	-18.03467	-48.88930
135.0	.3750	1.61150	-15.34295	-46.86356
150.0	.4167	1.79056	-12.65120	-43.15112
165.0	.4583	1.96961	-10.49781	-39.64514
180.0	.5000	2.14867	-8.83275	-36.89266
195.0	.5417	2.32772	-7.26772	-32.86795
210.0	.5833	2.50678	-5.65266	-27.46245
225.0	.6250	2.68583	-4.30681	-22.17883
240.0	.6667	2.86489	-3.23010	-17.41758
255.0	.7083	3.04394	-2.42256	-13.54151
270.0	.7500	3.22300	-2.15340	-12.44198
285.0	.7917	3.40206	-1.88422	-11.21692
300.0	.8333	3.58111	-1.61506	-9.87123
315.0	.8750	3.76017	-1.34587	-8.41313
330.0	.9167	3.93922	-.80753	5.11778
345.0	.9583	4.11828	53837	-3.44371
360.0	1.0000	4.29733	.26916	1 72979

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-4

EVAPORATION EXPERIMENT NO. GLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	************		***** EVAPORATION RATE	*****
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
10.0	.0270	.10177	-39.03028	-41.53702
20.0	.0541	.20353	-38.49193	-43.73419
30.0	.0811	.30530	-37.41528	-45.50179
40.0	.1081	.40707	-35.53102	-46.30398
50.0	.1351	.50883	-33.57762	-46.63414
60.0	.1622	.61060	-3[illegible].76257	-47.64706
70.0	.1892	.71236	-30.41676	-4[illegible].09169
80.0	.2162	.81413	-28.80164	-50.08482
90.0	.2432	.91590	-27.18663	-51.00483
100.0	.2703	1.01766	-25.84076	-52.40839
110.0	.2973	1.11943	-24.49486	-53.81227
120.0	.3243	1.22120	-22.87985	-54.50001
130.0	.3514	1.32296	-21.53395	-55.71274
140.0	.3784	1.42473	-20.45727	-57.64461
150.0	.4054	1.52649	-19.11139	-58.74351
160.0	.4324	1.62826	-17.76553	-59.[illegible]262
170.0	.4595	1.73003	-16.68884	-61.34209
180.0	.4865	1.83179	-15.61212	-62.97192
190.0	.5135	1.93356	-14.53543	-64.47382
200.0	.5405	2.03533	-13.45872	-65.76878
210.0	.5676	2.13709	-12.38203	-66.75250
220.0	.5946	2.23886	-11.30531	-67.28909
230.0	.6216	2.34062	-10.22862	-67.20718
240.0	.6486	2.44239	-9.15191	-66.29678
250.0	.6757	2.54416	-8.07521	-64.31435
260.0	.7027	2.64592	-7.26773	63.57304
270.0	.7297	2.74769	-6.46018	-61.91934
280.0	.7568	2.84946	-5.38351	-56.07352
290.0	.7838	2.95122	4.57600	51.45465
300.0	.8108	3.05[illegible]99	-4.03759	48.82823
310.0	.8378	3.15[illegible]75	-3.49926	-45.28086
320.0	.8649	3.25652	2.96092	40.[illegible]2754
330.0	.8919	3.358[illegible]9	[illegible].42259	35.13295
340.0	.9189	3.460[illegible]	1.61504	24.30171
35[illegible].0	.9459	3.56182	[illegible].07670	16.61760
360.0	.9730	3.66359	.80756	12.70856
370.0	1.0000	3.76535	.2[illegible]918	4.26410

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-5

EVAPORATION EXPERIMENT NO. GLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 50 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 58%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME *************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
30.0	.0345	.09382	-11.15850	-11.87519
60.0	.0690	.18765	-10.64463	-12.06770
90.0	.1034	.28147	-10.13074	-12.24580
120.0	.1379	.37530	-9.54346	-12.30357
150.0	.1724	.46912	-9.02959	-12.42327
180.0	.2069	.56295	-8.51570	-12.50889
210.0	.2414	.65677	-8.00182	-12.55201
240.0	.2759	.75060	-7.56136	-12.67016
270.0	.3103	.84442	-7.12088	-12.75955
300.0	.3448	.93825	-6.68042	-12.79895
330.0	.3793	1.03207	-6.16654	-12.62087
360.0	.4138	1.12590	-5.57925	-12.17053
390.0	.4483	1.21972	-5.06538	-11.75190
420.0	.4828	1.31355	-4.62490	-11.39104
450.0	.5172	1.40737	-4.25785	-11.11759
480.0	.5517	1.50120	-3.89079	-10.74985
510.0	.5862	1.59502	-3.52374	-10.27686
540.0	.6207	1.68885	-3.23009	-9.92618
570.0	.6552	1.78267	-2.86304	-9.23781
600.0	.6897	1.87650	-2.49599	-8.42027
630.0	.7241	1.97032	-2.12891	-7.47219
660.0	.7586	2.06415	-1.76187	-6.39791
690.0	.7931	2.15797	-1.39482	5.20760
720.0	.8276	2.25180	1.02775	-3 1852
750.0	.8621	2.34562	.73411	2.84198
780.0	.8966	2.43945	-.51337	2.01099
810.0	.9310	2.53327	.36707	1.44775
840.0	.9655	2.62710	-.22025	.87274
870.0	1.0000	2.72092	.07340	.29133

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING

TABLE E-6

EVAPORATION EXPERIMENT NO. GLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	*************		***** EVAPORATION RATE	*****
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
30.0	.0333	.09026	-11.01168	-11.64643
60.0	.0667	.18052	-10.64463	-11.91832
90.0	.1000	.27078	-10.35098	-12.29256
120.0	.1333	.36104	-9.98392	-12.59349
150.0	.1667	.45130	-9.54346	-12.79817
180.0	.2000	.54156	-9.24930	-13.21317
210.0	.2333	.63182	-8.88277	-13.53647
240.0	.2667	.72208	-8.44229	-13.73736
270.0	.3000	.81234	-8.00182	-13.91468
300.0	.3333	.90259	-7.56136	-14.06112
330.0	.3667	.99285	-7.12088	-14.16780
360.0	.4000	1.08311	-6.68042	-14.22445
390.0	.4333	1.17337	-6.23995	-14.21882
420.0	.4667	1.26363	-5.79949	-14.13710
450.0	.5000	1.35389	-5.35902	-13.96352
480.0	.5333	1.44415	-4.91854	-13.68104
510.0	.5667	1.53441	-4.47810	-13.27172
540.0	.6000	1.62467	-4.03761	-12.71720
570.0	.6333	1.71493	-3.59716	-12.00087
600.0	.6667	1.80519	-3.15668	-11.10866
630.0	.7000	1.89545	-2.71622	-10.03183
660.0	.7333	1.98571	-2.27575	-8.76874
690.0	.7667	2.07597	-1.83528	-7.32725
720.0	.8000	2.16623	-1.39481	-5.72606
750.0	.8333	2.25649	-1.02775	-4.30890
780.0	.8667	2.34675	-.80753	-3.44312
810.0	.9000	2.43701	-.58730	-2.53543
840.0	.9333	2.52727	-.36705	-1.59711
870.0	.9667	2.61753	-.22024	-.96286
900.0	1.0000	2.70778	-.07340	-.32142

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-7

EVAPORATION EXPERIMENT NO. GLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME ************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
15.0	.0313	.10123	-24.67042	-26.27069
30.0	.0625	.20245	-23.34407	-26.48384
45.0	.0938	.30368	-22.54822	-27.30565
60.0	.1250	.40491	-21.75241	-28.17445
75.0	.1563	.50614	-20.69135	-28.69925
90.0	.1875	.60736	-19.89550	-29.61314
105.0	.2188	.70859	-19.09967	-30.57477
120.0	.2500	.80982	-18.30387	-31.58603
135.0	.2813	.91104	-17.50803	-32.64822
150.0	.3125	1.01227	-16.71223	-33.76220
165.0	.3438	1.11350	-15.91660	-34.92748
180.0	.3750	1.21472	-14.85532	-35.45266
195.0	.4063	1.31595	-14.05946	-36.58424
210.0	.4375	1.41718	-13.26369	-37.72876
225.0	.4688	1.51841	-12.20256	-37.96404
240.0	.5000	1.61963	-11.14147	-37.90721
255.0	.5313	1.72086	-10.08038	-37.47011
270.0	.5625	1.82209	-9.01929	-36.55162
285.0	.5938	1.92331	-7.95822	-35.04207
300.0	.6250	2.02454	-7.16240	-34.20115
315.0	.6563	2.12577	-6.36655	-32.86811
330.0	.6875	2.22699	-5.30547	-29.37688
345.0	.7188	2.32822	-4.24437	-24.94926
360.0	.7500	2.42945	-3.44855	-21.33934
375.0	.7813	2.53068	-2.91803	-18.89915
390.0	.8125	2.63190	-2.38746	-16.07659
405.0	.8438	2.73313	-1.85691	-12.90238
420.0	.8750	2.83436	-1.32637	-9.43058
435.0	.9063	2.93558	-1.06109	-7.68765
450.0	.9375	3.03681	-.79582	-5.84902
465.0	.9688	3.13804	-.53055	-3.93726
480.0	1.0000	3.23926	-.26527	-1.97823

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-8

EVAPORATION EXPERIMENT NO. GL[illegible] SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	***************		***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
15.0	.0313	.09641	-24.37395	-25.83440
30.0	.0625	.19282	-23.54300	-26.48659
45.0	.0938	.28923	-22.98908	-27.51385
60.0	.1250	.38565	-22.15812	-28.25737
75.0	.1563	.48206	-21.32719	-29.02887
90.0	.1875	.57847	-20.49627	-29.82788
105.0	.2188	.67488	-19.66534	-30.65329
120.0	.2500	.77129	-19.11136	-32.00077
135.0	.2813	.86770	-18.28047	-32.94863
150.0	.3125	.96412	-17.44952	-33.92565
165.0	.3438	1.06053	-16.61860	-34.92755
180.0	.3750	1.15694	-15.78766	-35.94760
195.0	.4063	1.25335	-14.95675	-36.97628
210.0	.4375	1.34976	-14.12584	-37.99992
225.0	.4688	1.44617	-13.29488	-38.99957
240.0	.5000	1.54259	-12.46394	-39.94978
255.0	.5313	1.63900	-11.63302	-40.81627
270.0	.5625	1.73541	-10.80208	-41.55352
285.0	.5938	1.83182	-9.97117	-42.10278
300.0	.6250	1.92823	-9.14025	-42.38855
315.0	.6563	2.02464	-8.30929	-42.31702
330.0	.6875	2.12105	-7.47839	-41.77560
345.0	.7188	2.21747	-6.64745	-40.63344
360.0	.7500	2.31388	-5.53952	-36.74697
375.0	.7813	2.41029	-4.70859	-33.67440
390.0	.8125	2.506[illegible]	-3.87764	-29.63795
405.0	.8438	2.60311	-3.04676	-24.61686
420.0	.8750	2.69952	-2.21583	-18.57884
435.0	.9063	2.79594	-1.38490	-11.99925
450.0	.9375	2.89235	-.83093	-7.32167
465.0	.9688	2.98876	-.55397	-4.93718
480.0	1.0000	3.08517	-.27699	-2.48282

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-9

EVAPORATION EXPERIMENT NO. GLF9 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME *************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
30.0	.0385	.12257	-15.59807	-17.[illegible]5682
60.0	.0769	.24514	-11.74921	-13.97530
90.0	.1154	.36771	-11.20901	-14.45533
120.0	.1538	.49028	-10.60127	-14.85447
150.0	.1923	.61285	-9.79101	-14.91062
180.0	.2308	.73542	-9.18328	-15.22535
210.0	.2692	.85799	-8.57556	-15.50151
240.0	.3077	.98056	-7.96786	-15.72196
270.0	.3462	1.10313	-7.36012	-15.86478
300.0	.3846	1.22570	-6.75241	-15.90308
330.0	.4231	1.34827	-6.14470	-15.80396
360.0	.4615	1.47085	-5.53698	-15.52903
390.0	.5000	1.59342	-4.92927	-15.03535
420.0	.5385	1.71599	-4.32155	-14.27790
450.0	.5769	1.83856	-3.71382	-13.21447
480.0	.6154	1.96113	-3.10612	-11.81258
510.0	.6538	2.08370	-2.56591	-10.34623
540.0	.6923	2.20627	-2.09324	-8.87674
570.0	.7308	2.32884	-1.68810	-7.47014
600.0	.7692	2.45141	-1.28296	-5.87148
630.0	.8077	2.57398	-.94534	-4.43818
660.0	.8462	2.69655	-.67524	-3.22975
690.0	.8846	2.81912	-.47267	-2.29103
720.0	.9231	2.94169	-.33762	-1.65220
750.0	.9615	3.06426	-.20257	-.99704
780.0	1.0000	3.18683	-.06753	-.33302

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-10

EVAPORATION EXPERIMENT NO. GLF10 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 52%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	*************		***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
30.0	.0313	.10450	-15.89597	-17.16138
60.0	.0625	.20900	-12.88123	-14.86560
90.0	.0938	.31350	-12.12753	-14.96751
120.0	.1250	.41800	-11.57940	-15.30564
150.0	.1563	.52250	-11.09978	-15.74312
180.0	.1875	.62700	-10.55164	-16.08210
210.0	.2188	.73149	-10.07202	-16.52803
240.0	.2500	.83599	-9.59239	-16.98086
270.0	.2813	.94049	-9.11277	-17.43660
300.0	.3125	1.04499	-8.56465	-17.73606
330.0	.3438	1.14949	-8.01650	-17.98594
360.0	.3750	1.25399	-7.53688	-18.34916
390.0	.4063	1.35849	-6.[illegible]8875	-18.47266
420.0	.4375	1.46299	-6.44061	-18.48339
450.0	.4688	1.56749	-5.82397	-18.11846
480.0	.5000	1.67199	-5.13878	-17.26731
510.0	.5313	1.77649	-4.52214	-16.34756
540.0	.5625	1.88099	-3.97398	-15.39165
570.0	.5938	1.98549	-3.42585	-14.13893
600.0	.6250	2.08998	-2.94624	-12.88631
630.0	.6563	2.19448	-2.46663	-11.35694
660.0	.6875	2.29898	-2.05552	-9.89866
690.0	.7188	2.40348	-1.78145	-8.93437
720.0	.7500	2.50798	-1.50738	-7.83460
750.0	.7813	2.61248	-1.23331	-6.60657
780.0	.8125	2.71698	-.95923	-5.26385
810.0	.8438	2.82148	-.75369	-4.21684
840.0	.8750	2.92598	-.61665	-3.50620
870.0	.9063	3.03048	-.47962	-2.76203
900.0	.9375	3.13498	-.27407	-1.58993
930.0	.9688	3.23948	-.13703	-.79788
960.0	1.0000	3.34398	-.068[illegible]	-.39965

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-11

EVAPORATION EXPERIMENT NO. GLF11 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	*************		***** EVAPORATION RATE	*****
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
10.0	.0278	.10015	-34.68059	-36.93630
20.0	.0556	.20029	-33.04211	-37.51610
30.0	.0833	.30044	-31.67679	-38.39779
40.0	.1111	.40059	-30.31138	-39.28443
50.0	.1389	.50073	-28.94597	-40.16839
60.0	.1667	.60088	-27.58063	-41.03967
70.0	.1944	.70102	-26.21529	-41.88517
80.0	.2222	.80117	-25.12292	-43.19287
90.0	.2500	.90132	-24.03068	-44.55667
100.0	.2778	1.00146	-22.66522	-45.38341
110.0	.3056	1.10161	-21.29991	-46.11280
120.0	.3333	1.20176	-19.93452	-46.70634
130.0	.361	1.30190	-18.56915	-47.11711
140.0	.388	1.40205	-17.47685	-48.10176
150.0	.4167	1.50220	-16.11145	-48.09969
160.0	.44	1.60234	-14.74608	-47.72309
170.0	.4722	1.70249	-13.65376	-47.91645
180.0	.5000	1.80264	-12.56148	-47.79329
190.0	.5278	1.90278	-11.19612	-46.05299
200.0	.5556	2.00293	-9.83070	-43.53673
210.0	.5833	2.10307	-8.73841	-41.52947
220.0	.6111	2.20322	-7.64612	-38.82258
230.0	.6389	2.30337	-6.82691	-36.91644
240.0	.6667	2.40351	-6.00764	-34.45740
250.0	.6944	2.50366	-5.18843	-31.40448
260.0	.7222	2.60381	-4.64230	-29.56156
270.0	.7500	2.70395	-4.09612	-27.33929
280.0	.7778	2.80410	-3.54994	-24.72547
290.0	.8056	2.90425	-3.00387	-21.72238
300.0	.8333	3.00439	-2.45766	-18.34667
310.0	.8611	3.10454	-1.91155	-14.63769
320.0	.8889	3.20469	-1.63843	-12.82975
330.0	.9167	3.30483	-1.36534	-10.89648
340.0	.9444	3.40498	-.81926	-6.61449
350.0	.9722	3.50512	-.54617	-4.44417
360.0	1.0000	3.60527	-.27306	-2.23057

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-12

EVAPORATION EXPERIMENT NO. GLF12 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	*************		***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
10.0	.0256	.07332	-28.53246	-29.84934
20.0	.0513	.14664	-27.72496	-30.36642
30.0	.0769	.21996	-26.91746	-30.89013
40.0	.1026	.29329	-25.84080	-31.07965
50.0	.1282	.36661	-25.03316	-31.57837
60.0	.1538	.43993	-24.49490	-32.44973
70.0	.1795	.51325	-23.68740	-32.98020
80.0	.2051	.58657	-22.87980	-33.50616
90.0	.2308	.65989	-22.34145	-34.46112
100.0	.2564	.73321	-21.80315	-35.47555
110.0	.2821	.80654	-21.26482	-36.55530
120.0	.3077	.87986	-20.72638	-37.70702
130.0	.3333	.95318	-19.91894	-38.38909
140.0	.3590	1.02650	-19.11139	-39.05708
150.0	.3846	1.09982	-18.57299	-40.32334
160.0	.4103	1.17314	-18.03469	-41.67789
170.0	.4359	1.24647	-17.49636	-43.13031
180.0	.4615	1.31979	-16.68881	-43.93431
190.0	.4872	1.39311	-15.88129	-44.69795
200.0	.5128	1.46643	-15.34298	-46.27251
210.0	.5385	1.53975	-14.80458	-47.95976
220.0	.5641	1.61307	-13.99705	-48.76253
230.0	.5897	1.68639	-13.18958	-49.46379
240.0	.6154	1.75972	-12.38198	-50.02701
250.0	.6410	1.83304	-11.57451	-50.40962
260.0	.6667	1.90636	-10.76699	-50.55847
270.0	.6923	1.97968	-9.95947	-50.41199
280.0	.7179	2.05300	-9.42110	-51.48296
290.0	.7436	2.12632	-8.61358	-50.76488
300.0	.7692	2.19964	-7.80610	-49.52919
310.0	.7949	2.27297	-6.99855	-47.67896
320.0	.8205	2.34629	-5.92181	-43.02753
330.0	.8462	2.41961	-5.11432	-39.42571
340.0	.8718	2.49293	-4.57596	-37.31059
350.0	.8974	2.56625	-3.76844	-32.25900
360.0	.9231	2.63957	-2.96092	26.38024
370.0	.9487	2.71290	-2.15340	-19.77226
380.0	.9744	2.78622	-1.34585	-12.59811
390.0	1.0000	2.85954	-.53837	-5.07915

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-13

EVAPORATION EXPERIMENT NO. GLF13 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME *************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
40.0	.0313	.10895	-8.98071	-9.61886
80.0	.0625	.21790	-8.30548	-9.52134
120.0	.0938	.32685	-7.96784	-9.79524
160.0	.1250	.43580	-7.63023	-10.07860
200.0	.1563	.54475	-7.29260	-10.37059
240.0	.1875	.65369	-7.02251	-10.78192
280.0	.2188	.76264	-6.75242	-11.22709
320.0	.2500	.87159	-6.48230	-11.71035
360.0	.2813	.98054	-6.21222	-12.23694
400.0	.3125	1.08949	-5.80708	-12.49473
440.0	.3438	1.19844	-5.40193	-12.71470
480.0	.3750	1.30739	-5.06431	-13.07104
520.0	.4063	1.41634	-4.65916	-13.19777
560.0	.4375	1.52529	-4.18650	-12.99754
600.0	.4688	1.63424	-3.64631	-12.35354
640.0	.5000	1.74319	-3.10610	-11.41040
680.0	.5313	1.85214	-2.63345	-10.41867
720.0	.5625	1.96108	-2.22829	-9.42986
760.0	.5938	2.07003	-1.82316	-8.18171
800 0	.6250	2.17898	-1.48553	-7.01187
840.0	.6563	2.28793	-1.21544	-5.99091
880.0	.6875	2.39688	-1.01286	-5.18359
920.0	.7188	2.50583	-.87781	-4.64664
960.0	.7500	2.61478	-.74277	-4.04941
1000.0	.7813	2.72373	-.60772	-3.39628
1040.0	.8125	2.83268	-.47267	-2.69411
1080.0	.8438	2.94163	-.33761	-1.95206
1120.0	.8750	3.05058	-.27011	-1.57999
1160.0	.9063	3.15953	-.27010	-1.59861
1200.0	.9375	3.26847	-.20258	-1.20967
1240.0	.9688	3.37742	-.13505	-.81128
1280.0	1.0000	3.48637	-.06753	-.40686

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-14

EVAPORATION EXPERIMENT NO. GLF14 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 43%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	*************		***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
40.0	.0345	.09901	-9.52289	-10.11887
80.0	.0690	.19801	-9.10582	-10.29158
120.0	.1034	.29702	-8.75827	-10.54432
160.0	.1379	.39603	-8.48025	-10.89774
200.0	.1724	.49503	-8.20218	-11.27547
240.0	.2069	.59404	-7.85465	-11.57041
280.0	.2414	.69305	-7.50709	-11.87031
320.0	.2759	.79205	-7.22907	-12.30029
360.0	.3103	.89106	-6.95101	-12.76062
400.0	.3448	.99007	-6.60346	-13.10515
440.0	.3793	1.08907	-6.25591	-13.44808
480.0	.4138	1.18808	-5.90836	-13.78372
520.0	.4483	1.28709	-5.49130	-13.91314
560.0	.4828	1.38609	-5.07424	-13.96702
600.0	.5172	1.48510	-4.65718	-13.92292
640.0	.5517	1.58411	-4.24013	-13.75447
680.0	.5862	1.68311	-3.75355	-13.16769
720.0	.6207	1.78212	-3.26697	-12.33510
760.0	.6552	1.88113	-2.91943	-11.82934
800.0	.6897	1.98013	-2.57189	-11.13909
840.0	.7241	2.07914	-2.22432	-10.24410
880.0	.7586	2.17815	-1.94629	-9.48977
920.0	.7931	2.27715	-1.52922	-7.81666
960.0	.8276	2.37616	-1.04265	-5.51123
1000.0	.8621	2.47516	-.76461	-4.14519
1040.0	.8966	2.57417	-.69510	-3.85825
1080.0	.9310	2.67318	-.55608	-3.14670
1120.0	.9655	2.77218	-.34755	-1.99087
1160.0	1.0000	2.87119	-.13903	-.80033

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-15

EVAPORATION EXPERIMENT NO. GLF15 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME *************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
15.0	.0323	.10017	-22.55406	-23.98281
30.0	.0645	.20034	-21.48005	-24.30728
45.0	.0968	.30051	-20.67455	-24.93679
60.0	.1290	.40068	-19.86905	-25.58479
75.0	.1613	.50085	-19.06355	-26.24959
90.0	.1935	.60102	-18.52652	-27.35325
105.0	.2258	.70119	-17.98955	-28.56444
120.0	.2581	.80136	-17.18403	-29.40466
135.0	.2903	.90153	-16.37855	-30.26697
150.0	.3226	1.00169	-15.84155	-31.72801
165.0	.3548	1.10186	-15.03603	-32.71719
180.0	.3871	1.20203	-14.23053	-33.72264
195.0	.4194	1.30220	-13.69353	-35.49227
210.0	.4516	1.40237	-13.15653	-37.47598
225.0	.4839	1.50254	-12.35102	-38.78583
240.0	.5161	1.60271	-11.27704	-39.06760
255.0	.5484	1.70288	-10.20301	-38.98681
270.0	.5806	1.80305	-9.12903	-38.42331
285.0	.6129	1.90322	-8.05504	-37.23769
300.0	.6452	2.00339	-6.98102	-35.28001
315.0	.6774	2.10356	-5.90701	-32.40769
330.0	.7097	2.20373	-4.83302	-28.51239
345.0	.7419	2.30390	-3.75899	-23.55598
360.0	.7742	2.40407	-2.95354	-19.45993
375.0	.8065	2.50424	-2.41650	-16.62053
390.0	.[illegible]87	2.60441	-1.87951	-13.38414
405.0	[illegible]10	2.70458	-1.34251	-9.80[illegible]
420.0	.9032	2.80474	-.80550	-5.97756
435.0	.9355	2.90491	-.53702	-4.02755
450.0	.9677	3.00508	-.53701	-4.07083
465.0	1.0000	3.10525	-.26848	-2.04625

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-16

EVAPORATION EXPERIMENT NO. GLF16 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELAT[illegible] HUMIDITY 38%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	*************		***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
15.0	.0345	.09229	-22.89067	-24.23070
30.0	.0690	.18458	-21.80065	-24.43944
45.0	.1034	.27687	-20.98313	-24.94035
60.0	.1379	.36916	-20.16562	-25.44194
75.0	.1724	.46145	-19.34807	-25.94031
90.0	.2069	.55374	-18.80306	-26.84459
105.0	.2414	.64603	-18.25805	-27.81838
120.0	.2759	.73832	-17.71301	-28.87034
135.0	.3103	.83061	-17.16800	-30.01088
150.0	.3448	.92290	-16.62302	-31.25224
165.0	.3793	1.01519	-15.80546	-32.01345
180.0	.4138	1.10749	-15.26044	-33.40401
195.0	.4483	1.19978	-14.71546	-34.92931
210.0	.4828	1.29207	-13.89791	-35.84563
225.0	.5172	1.38436	-13.35291	-37.56566
240.0	.5517	1.47665	-12.53535	-38.55011
255.0	.5862	1.56894	-11.71786	-39.47263
270.0	.6207	1.66123	-11.17281	-41.40115
285.0	.6552	1.75352	-10.35532	-42.29266
300.0	.6897	1.84581	-9.26527	-41.64830
315.0	.7241	1.93810	-8.17525	-40.32910
330.0	.7586	2.03039	-7.08521	-38.17547
345.0	.7931	2.12268	-5.72269	-33.31601
360.0	.8276	2.21497	-4.36011	-27.04178
375.0	.8621	2.30726	-3.27011	-21.32649
390.0	.8966	2.39955	-2.18009	-14.72352
405.0	.9310	2.49184	-1.36254	-9.41129
420.0	.9655	2.58413	-.81753	-5.72491
435.0	1.0000	2.67642	-.27249	-1.91703

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-17

EVAPORATION EXPERIMENT NO. BLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME **************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
45.0	.0370	.13264	-11.08510	-12.03189
90.0	.0741	.26528	-10.42439	-12.30293
135.0	.1111	.39792	-9.91051	-12.75555
180.0	.1481	.53056	-9.47005	-13.34315
225.0	.1852	.66320	-9.02959	-13.98565
270.0	.2222	.79584	-8.51569	-14.55223
315.0	.2593	.92849	-8.00183	-15.14413
360.0	.2963	1.06113	-7.41452	-15.58509
405.0	.3333	1.19377	-6.75384	-15.78736
450.0	.3704	1.32641	-6.09313	-15.84497
495.0	.4074	1.45905	-5.43243	-15.70143
540.0	.4444	1.59169	-4.77173	-15.28863
585.0	.4815	1.72433	-4.03762	-14.24467
630.0	.5185	1.85697	-3.37691	-13.01437
675.0	.5556	1.98961	-2.71621	-11.30840
720.0	.5926	2.12225	-2.12893	-9.45849
765.0	.6296	2.25489	-1.61504	-7.56045
810.0	.6667	2.38753	-1.17458	-5.72191
855.0	.7037	2.52017	-.80753	-4.04685
900.0	.7407	2.65281	-.51388	-2.62320
945.0	.7778	2.78546	-.36705	-1.89895
990.0	.8148	2.91810	-.29364	-1.53573
1035.0	.8519	3.05074	-.22024	-1.16133
1080.0	.8889	3.18338	.14682	-.77847
1125.0	.9259	3.31602	-.14681	-.78275
1170.0	.9630	3.44866	-.14682	-.78717
1215.0	1.0000	3.58130	-.07340	-.39464

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-18

EVAPORATION EXPERIMENT NO. BLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME *************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
40.0	.0313	.12697	-11.92095	-12.86984
80.0	.0625	.25395	-11.30078	-13.19605
120.0	.0938	.38092	-10.81844	-13.70350
160.0	.1250	.50790	-10.40499	-14.34949
200.0	.1563	.63487	-9.99154	-15.06303
240.0	.1875	.76184	-9.57810	-15.85578
280.0	.2188	.88882	-9.16467	-16.74236
320.0	.2500	1.01579	-8.75122	-17.74128
360.0	.2813	1.14276	-8.33778	-18.87652
400.0	.3125	1.26974	-7.92433	-20.17962
440.0	.3438	1.39671	-7.44198	-21.46754
480.0	.3750	1.52369	-6.95962	-22.92232
520.0	.4063	1.65066	-6.47728	-24.57644
560.0	.4375	1.77763	-5.85712	-25.76472
600.0	.4688	1.90461	-5.23695	-26.86428
640.0	.5000	2.03158	-4.68569	-28.23376
680.0	.5313	2.15856	-4.13444	-29.44975
720.0	.5625	2.28553	-3.58317	-30.30728
760.0	.5938	2.41250	-3.03193	-30.47896
800.0	.6250	2.53948	-2.54957	-30.45814
840.0	.6563	2.66645	-2.13613	-30.30152
880.0	.6875	2.79342	-1.79159	-30.15383
920.0	.7188	2.92040	-1.44704	-28.67402
960.0	.7500	3.04737	-1.17143	-27.10377
1000.0	.7813	3.17435	-.96470	-25.89553
1040.0	.8125	3.30132	-.68908	-20.88639
1080.0	.8438	3.42829	-.48235	-16.07384
1120.0	.8750	3.55527	-.34453	-12.33866
1160.0	.9063	3.68224	-.27563	-10.53128
1200.0	.9375	3.80921	-.20673	-8.30423
1240.0	.9688	3.93619	-.13782	-5.73256
1280.0	1.0000	4.06316	-.06891	-2.91781

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-19

EVAPORATION EXPERIMENT NO. BLF3 SERIES TD 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME ************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
15.0	.0333	.10560	-27.18661	-29.05578
30.0	.0667	.21120	-25.84076	-29.54838
45.0	.1000	.31680	-24.49487	-29.99754
60.0	.1333	.42239	-23.14902	-30.38781
75.0	.1667	.52799	-22.34147	-31.51477
90.0	.2000	.63359	-21.53395	-32.72807
105.0	.2333	.73919	-20.45729	-33.56083
120.0	.2667	.84479	-19.38054	-34.38100
135.0	.3000	.95039	-18.57304	-35.73452
150.0	.3333	1.05598	-17.76550	-37.18866
165.0	.3667	1.16158	-16.95799	-38.75349
180.0	.4000	1.26718	-16.15047	-40.43987
195.0	.4333	1.37278	-15.07377	-41.44542
210.0	.4667	1.47838	-13.99706	-42.34081
225.0	.5000	1.58398	-12.92039	-43.06683
240.0	.5333	1.68958	-11.57450	-42.45657
255.0	.5667	1.79517	-10.22863	-41.17537
270.0	.6000	1.90077	-9.15193	-40.35946
285.0	.6333	2.00637	-8.07526	-38.88835
300.0	.6667	2.11197	-6.99851	-36.62376
315.0	.7000	2.21757	-5.92184	-33.44169
330.0	.7333	2.32317	-4.84516	-29.25563
345.0	.7667	2.42877	-3.76842	-24.04899
360.0	.8000	2.53436	-2.69174	-17.90578
375.0	.8333	2.63996	-1.88422	-12.91715
390.0	.8667	2.74556	-1.34587	-9.43248
405.0	.9000	2.85116	-1.07670	-7.68317
420.0	.9333	2.95676	-.80752	-5.84203
435.0	.9667	3.06236	-.53835	-3.93090
450.0	1.0000	3.16795	-.26918	-1.97465

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-20

EVAPCRATION EXPERIMENT NO. BLF4 SERIES 10 2**6 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON ..K/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 20%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME *************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
20.0	.0357	.14506	-27.18661	-29.57765
40.0	.0714	.29013	-26.37911	-31.37671
60.0	.1071	.43519	-25.30240	-33.05405
80.0	.1429	.58025	-24.49488	-35.36398
100.0	.1786	.72532	-23.68735	-38.06933
120.0	.2143	.87038	-22.34146	-40.19811
140.0	.2500	1.01544	-20.99561	-42.55693
160.0	.2857	1.16051	-19.91891	-45.88292
180.0	.3214	1.30557	-18.84220	-49.83426
200.0	.3571	1.45063	-17.49633	-53.65784
220.0	.3929	1.59570	-16.15047	-58.08504
240.0	.4286	1.74076	-14.80459	-63.26011
260.0	.4643	1.88582	-13.45874	-69.37216
280.0	.5000	2.03089	-12.11283	-76.66820
300.0	.5357	2.17595	-10.49782	-82.80666
320.0	.5714	2.32101	-8.88275	-88.50693
340.0	.6071	2.46608	-7.26772	-92.28659
360.0	.6429	2.61114	-5.65266	-91.25497
380.0	.6786	2.75620	-4.03760	-80.85277
400.0	.7143	2.90127	-2.69176	-64.19083
420.0	.7500	3.04633	-1.88422	-51.86247
440.0	.7857	3.19140	-1.34586	-41.62996
460.0	.8214	3.33646	-1.07671	-36.96549
480.0	.8571	3.48152	-.80750	-30.21372
500.0	.8929	3.62659	-.53836	-21.42661
520.0	.9286	3.77165	-.53838	-22.88552
540.0	.9643	3.91671	-.53836	-24.55564
560.0	1.0000	4.06178	-.26917	-12.74254

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-21

EVAPORATION EXPERIMENT NO. BLF5 SERIES ID 2**4 FACTORIAL EXPRRIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	*************		***** EVAPORATION RATE	*****
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
30.0	.0263	.08808	-11.08510	-11.72705
60.0	.0526	.17617	-10.20416	-11.40298
90.0	.0789	.26425	-9.69027	-11.44050
120.0	.1053	.35234	-9.39664	-11.73683
150.0	.1316	.44042	-9.10298	-12.04642
180.0	.1579	.52851	-8.88277	-12.47943
210.0	.1842	.61659	-8.66253	-12.94818
240.0	.2105	.70467	-8.36887	-13.33287
270.0	.2368	.79276	-8.07524	-13.73785
300.0	.2632	.88084	-7.78159	-14.16426
330.0	.2895	.96893	-7.48795	-14.61336
360.0	.3158	1.05701	-7.12088	-14.92097
390.0	.3421	1.14510	-6.68042	-15.03754
420.0	.3684	1.23318	-6.23995	-15.09294
450.0	.3947	1.32127	-5.79948	-15.07157
480.0	.4211	1.40935	-5.35902	-14.95547
510.0	.4474	1.49743	-4.91855	-14.72432
540.0	.4737	1.58552	-4.55150	-14.60847
570.0	.5000	1.67360	-4.18443	-14.38433
600.0	.5263	1.76169	-3.74397	-13.74373
630.0	.5526	1.84977	-3.30349	-12.89925
660.0	.5789	1.93786	-2.86304	-11.[illegible]262
690.0	.6053	2.02594	-2.42257	-10.53301
720.0	.6316	2.11402	-1.98210	-9.00095
750.0	.6579	2.20211	-1.61506	-7.60978
780.0	.6842	2.29019	-1.39481	-6.79250
810.0	.7105	2.37828	-1.24800	-6.26556
840.0	.7368	2.46636	-1.10115	-5.68350
870.0	.7632	2.55445	-.95435	-5.04857
900.0	.[illegible]95	2.64253	-.80753	-4.36395
930.0	.8158	2.73062	-.58729	-3.22429
960.0	.8421	2.81870	-.44047	-2.44746
990.0	.8684	2.90678	.44047	-2.47738
1020.0	.3947	2.99487	-.36706	-2.08579
1050.0	.9211	3.08255	-.29365	-1.68250
1080.0	.9474	3.17104	-.22023	-1.26973
1110.0	.9737	3.25912	.14682	-.85005
1140.0	1.0000	3.34721	-.07341	-.42591

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-22

EVAPORATION EXPERIMENT NO. BLF6 SERIES 1D 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME	*************		***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
40.0	.0323	.12691	-11.42523	-12.31308
80.0	.0645	.25382	-11.07041	-12.90216
120.0	.0968	.38074	-10.64462	-13.45975
160.0	.1290	.50765	-10.21884	-14.06863
200.0	.1613	.63456	-9.86402	-14.85313
240.0	.1935	.76147	-9.43824	-15.61232
280.0	.2258	.88838	-9.01245	-16.45630
320.0	.2581	1.01530	-8.58666	-17.40063
360.0	.2903	1.14221	-8.16088	-18.46501
400.0	.3226	1.26912	-7.73509	-19.67479
440.0	.3548	1.39603	-7.23834	-20.83183
480.0	.3871	1.52294	-6.59967	-21.58064
520.0	.4194	1.64986	-5.89003	-21.92523
560.0	.4516	1.77677	-5.25134	-22.29869
600.0	.4839	1.90368	-4.61267	-22.34940
640.0	.5161	2.03059	-3.90302	-21.47388
680.0	.5484	2.15751	-3.19339	-19.76075
720.0	.5806	2.28442	-2.62568	-18.10416
760.0	.6129	2.41133	-2.19988	-16.77397
800.0	.6452	2.53824	-1.84507	-15.43943
840.0	.6774	2.66515	-1.55121	-14.23799
880.0	.7097	2.79207	-1.27736	-12.57373
920.0	.7419	2.91898	-1.06446	-11.22003
960.0	.7742	3.04589	-.92252	-10.35966
1000.0	.8065	3.17280	-.78061	-9.27940
1040.0	.8387	3.29971	-.63868	-7.97431
1080.0	.8710	3.42663	-.49675	-6.45488
1120.0	.9032	3.55354	-.35482	-4.74876
1160.0	.9355	3.68045	-.28386	-3.89245
1200.0	.9677	3.80736	-.21290	-2.97412
1240.0	1.0000	3.93427	-.07097	-.99762

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-23

EVAPORATION EXPERIMENT NO. BLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************* TIME **************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
15.0	.0294	.10311	-23.41817	-24.92490
30.0	.0588	.20622	-22.61065	-25.65944
45.0	.0882	.30934	-21.80316	-26.43126
60.0	.1176	.41245	-21.26476	-27.61628
75.0	.1471	.51556	-20.45728	-28.52379
90.0	.1765	.61867	-19.38054	-29.04878
105.0	.2059	.72178	18.57304	-29.99384
120.0	.2353	.82489	-17.76554	-30.98447
135.0	.[illegible]47	.92801	-16.95797	-32.02069
150.0	.2941	1.03112	-16.41964	-33.70141
165.0	.3235	1.13423	-15.61212	-34.93359
180.0	.3529	1.23734	-14.80458	-36.22427
195.0	.3824	1.34045	-13.99708	-37.56993
210.0	.4118	1.44356	-12.92038	-38.08979
225.0	.4412	1.54668	-11.84367	-38.37428
240.0	.4706	1.64979	-10.76700	-38.33827
255.0	.5000	1.75290	-9.42110	-36.72621
270.0	.5294	1.85601	-8.07523	-34.26392
285.0	.5588	1.95912	-7.26773	-33.50469
30[illegible].0	.5882	2.06223	-6.46018	-32.26208
315.0	.6176	2.16535	-5.38349	-28.89006
330.0	.6471	2.26846	-4.57595	-26.21846
345.0	.6765	2.37157	-4.03762	-24.60325
360.0	.7059	2.47468	-3.49927	-22.56484
375.0	.7353	2.57779	-2.96094	-20.08332
390.0	.7647	2.68090	-2.42256	-17.15947
405.0	.7941	2.78402	-1.88422	-13.82247
420.0	.8235	2.88713	-1.61505	-12.22169
435.0	.8529	2.99024	-1.34587	-10.45964
450.0	.8824	3.09335	-1.07670	-8.55252
465.0	.9118	3.19646	-.80751	-6.52229
480.0	.9412	3.29957	-.53837	-[illegible].39781
495.0	.9706	3.40269	-.53835	-4.44811
510.0	1.0000	3.50580	-.26916	-2.23680

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

TABLE E-24

EVAPORATION EXPERIMENT NO. BLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

EVAPORATION RATE FOR A DROPLET IN A UNIFORM ARRAY

************ TIME *************			***** EVAPORATION RATE *****	
MINUTES	FRACTIONAL	HALF-LIFES	MICROGRAMS PER MINUTE	NORMALIZED
.0	.0000	.00000	.00000	.00000
15.0	.0313	.10001	-25.99681	-27.63011
30.0	.0625	.20002	-24.93570	-28.20183
45.0	.0938	.30003	-23.87458	-28.76802
60.0	.1250	.40004	-22.81352	-29.32234
75.0	.1563	.50005	-22.01771	-30.24575
90.0	.1875	.60006	-21.48710	-31.64047
105.0	.2188	.70008	-20.69135	-32.73674
120.0	.2500	.80009	-19.89549	-33.90428
135.0	.2813	.90010	-19.36496	-35.67734
150.0	.3125	1.00011	-18.83440	-37.67228
165.0	.3438	1.10012	-18.30386	-39.93567
180.0	.3750	1.20013	-17.77331	-42.52806
195.0	.4063	1.30014	-17.24279	-45.53006
210.0	.4375	1.40015	-16.44695	-48.18713
225.0	.4688	1.50016	-15.65112	-51.19332
240.0	.5000	1.60017	-14.85529	-54.62565
255.0	.5313	1.70018	-14.05949	-58.58659
270.0	.5625	1.80019	-13.52894	-64.66519
285.0	.5938	1.90020	-12.20258	-67.24358
300.0	.6250	2.00022	-10.61095	-67.43937
315.0	.6563	2.10023	-9.54984	-70.41322
330.0	.6875	2.20024	-8.48874	-72.97523
345.0	.7188	2.30025	-7.42766	-74.69927
360.0	.7500	2.40026	-6.36656	-74.93804
375.0	.7813	2.50027	-5.30548	-72.78369
390.0	.8125	2.60028	-4.24437	-67.11245
405.0	.8438	2.70029	-3.18326	-56.83954
420.0	.8750	2.80030	-2.38746	-47.20572
435.0	.9063	2.90031	-1.59166	-33.89648
450.0	.9375	3.00032	-.79583	-17.62754
465.0	.9688	3.10033	-.53055	-12.07436
480.0	1.0000	3.20035	-.26525	-6.12060

NORMALIZED: MICROGRAMS PER MINUTE PER FRACTION OF LIQUID CONTAMINATION REMAINING.

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APPENDIX F

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

TABLE F-1

EVAPORATION EXPERIMENT NO. GLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 45%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.700	4.700
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	27.861	27.861
GRAMS PER DROPLET	.00000	.00639	.00639

ESTIMATED MEAN DROPLET MASS .00639 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.26 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0155945 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.01621 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 2.84553 PERCENT

TABLE -2

EVAPORATION EXPERIMENT NO. GLF2 SERIES 1D 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	5.000	5.000
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	29.636	29.636
GRAMS PER DROPLET	.00000	.00679	.00679

ESTIMATED MEAN DROPLET MASS .00679 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.31 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0137671 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69 000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.29408 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 3.14947 PERCENT

TABLE F-3

EVAPORATION EXPERIMENT NO. GLF3 SERIES TD 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.200	4.200
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	24.902	24.902
GRAMS PER DROPLET	.00000	.00571	.00571

ESTIMATED MEAN DROPLET MASS .00571 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.18 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0052388 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .92962 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .85546 PERCENT

TABLE F-4

EVAPORATION EXPERIMENT NO. GLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	5.000	5.000
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	29.636	29.636
GRAMS PER DROPLET	.00000	.00679	.00679

ESTIMATED MEAN DROPLET MASS .00679 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.31 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0029646 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .99138 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .96024 PERCENT

TABLE F-5

EVAPORATION EXPERIMENT NO. GLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 58%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.200	4.200
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	24.902	24.902
GRAMS PER DROPLET	.00000	.00571	.00571

ESTIMATED MEAN DROPLET MASS .00571 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.[illegible]8 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0095029 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 2.92763 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 2.81124 PERCENT

TABLE F-6

EVAPORATION EXPERIMENT NO. GLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.700	4.700
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	27.861	27.861
GRAMS PER DROPLET	.00000	.00639	.00639

ESTIMATED MEAN DROPLET MASS .00639 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.26 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0092592 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.00333 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 2.89986 PERCENT

TABLE F-7

EVAPORATION EXPERIMENT NO. GLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 30%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.600	4.600
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	27.269	27.269
GRAMS PER DROPLET	.00000	.00625	.00625

ESTIMATED MEAN DROPLET MASS .00625 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.25 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0028816 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 68.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 68.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .91973 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .88750 PERCENT

TABLE F-8

EVAPORATION EXPERIMENT NO. GLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON HICKORY/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	5.000	5.000
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	29.636	29.636
GRAMS PER DROPLET	.00000	.00679	.00679

ESTIMATED MEAN DROPLET MASS .00679 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.31 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0028207 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 71.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 71.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .94023 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .91060 PERCENT

TABLE F-9

EVAPORATION EXPERIMENT NO. GLF9 SERIES 1D 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 64%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	3.900	3.900
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	23.127	23.127
GRAMS PER DROPLET	.00000	.00530	.00530

ESTIMATED MEAN DROPLET MASS .00530 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.13 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0169294 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 68.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 68.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.43337 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 3.21008 PERCENT

TABLE F-10

EVAPORATION EXPERIMENT NO. GLF10 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 52%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	5.000	5.000
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	29.636	29.636
GRAMS PER DROPLET	.00000	.00679	.00679

ESTIMATED MEAN DROPLET MASS .00679 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.31 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0164475 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.50908 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 3.33631 PERCENT

TABLE F-11

EVAPORATION EXPERIMENT NO. GLF11 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.300	4.300
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	25.494	25.494
GRAMS PER DROPLET	.00000	.00584	.00584

ESTIMATED MEAN DROPLET MASS .00584 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.20 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0026779 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 70.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 70.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .93151 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .89947 PERCENT

TABLE F-12

EVAPORATION EXPERIMENT NO. GLF12 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	5.000	5.000
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	29.636	29.636
GRAMS PER DROPLET	.00000	.00679	.00679

ESTIMATED MEAN DROPLET MASS .00679 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.31 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0023392 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .94087 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .91630 PERCENT

TABLE F-13

EVAPORATION EXPERIMENT NO. GLF13 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.100	4.100
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	24.310	24.310
GRAMS PER DROPLET	.00000	.00557	.00557

ESTIMATED MEAN DROPLET MASS .00557 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.16 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0112063 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 68.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 68.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.49889 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 3.35829 PERCENT

TABLE F-14

EVAPORATION EXPERIMENT NO. GLF14 SERIES 3D 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 43%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	5.000	5.000
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	29.636	29.636
GRAMS PER DROPLET	.00000	.00679	.00679

ESTIMATED MEAN DROPLET MASS 00679 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.31 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0115358 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 70.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 70.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.44828 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 3.32711 PERCENT

TABLE F-15

EVAPORATION EXPERIMENT NO. GLF15 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.300	4.300
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	25.494	25.494
GRAMS PER DROPLET	.00000	.00584	.00584

ESTIMATED MEAN DROPLET MASS .00584 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.20 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0025435 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 67.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 57.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .89725 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .66682 PERCENT

TABLE F-16

EVAPORATION EXPERIMENT NO. GLF16 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.800	4.800
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	28.452	28.452
GRAMS PER DROPLET	.00000	.00652	.00652

ESTIMATED MEAN DROPLET MASS .00652 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.28 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0025814 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 68.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 68.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .88416 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .85591 PERCENT

TABLE F-17

EVAPORATION EXPERIMENT NO 9LF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.800	4.800
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	28.452	28.452
GRAMS PER DROPLET	.00000	.00652	.00652

ESTIMATED MEAN DROPLET MASS .00652 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.28 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0142544 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.21189 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 3.05913 PERCENT

TABLE F-18

EVAPORATION EXPERIMENT NO. BLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	5.000	5.000
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	29.636	29.636
GRAMS PER DROPLET	.00000	.00679	.00679

ESTIMATED MEAN DROPLET MASS .00679 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.31 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0140384 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 67.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 67.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.94337 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 3.79591 PERCENT

TABLE F-19

EVAPORATION EXPERIMENT NO. BLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.800	4.800
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	28.452	28.452
GRAMS PER DROPLET	.00000	.00652	.00652

ESTIMATED MEAN DROPLET MASS .00652 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.28 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0031677 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .91917 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .88523 PERCENT

TABLE F-20

EVAPORATION EXPERIMENT NO. BLF4 SERIES TO 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/TOP SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 20%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	5.200	5.200
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	30.819	30.819
GRAMS PER DROPLET	.00000	.00707	.00707

ESTIMATED MEAN DROPLET MASS .00707 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.34 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0041423 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 1.04513 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 1.00329 PERCENT

TABLE F-21

EVAPORATION EXPERIMENT NO. BLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.600	4.600
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	27.269	27.269
GRAMS PER DROPLET	.00000	.00625	.00625

ESTIMATED MEAN DROPLET MASS .00625 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.25 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0096249 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 9.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.21802 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 3.11039 PERCENT

TABLE F-22

EVAPORATION EXPERIMENT NO. BLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.900	4.900
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	29.044	29.044
GRAMS PER DROPLET	.00000	.00666	.00666

ESTIMATED MEAN DROPLET MASS .00666 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.30 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0133203 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 3.75394 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) 3.61117 PERCENT

TABLE F-23

EVAPORATION EXPERIMENT NO. BLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 10G CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	4.400	4.400
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	26.086	26.086
GRAMS PER DROPLET	.00000	.00598	.00598

ESTIMATED MEAN DROPLET MASS .00598 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS .00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT .00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.22 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .00[illegible]3 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULAT[illegible] * 69.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 69.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) .93294 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .90161 PERCENT

TABLE F-24

EVAPORATION EXPERIMENT NO. BLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 GMS/SQ METER ON OAK/BOTTOM SURFACE
WINDSPEED 11.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

SUMMARY OF LIQUID CONTAMINATION BY SUBSTRATE POSITION

	SUBSTRATE 1	SUBSTRATE 2	SUBSTRATE 3
CONTAMINATION, GRAMS	.000	5.100	5.100
NUMBER OF DROPLETS	.000	736.000	736.000
GRAMS PER SQ METER	.000	30.228	30.228
GRAMS PER DROPLET	.00000	.00693	.00693

ESTIMATED MEAN DROPLET MASS	.00693 GRAMS
STANDARD DEVIATION OF TEST DROPLET MASS	.00000 GRAMS
STANDARD ERROR OF MEAN MASS ESTIMANT	.00000 GRAMS

EQUIVALENT DROPLET DIAMETER 2.33 MILLIMETERS

DIFFERENCE BETWEEN SAMPLE MASS ESTIMATES .0030017 GRAMS

FOR CONVERSION FACTOR PPM/AB * CALCULATION * 68.000

FOR CONVERSION FACTOR PPM/AB * CALIBRATION * 68.000

RATIO OF TEST MASS ANALYZED BY MIRAN SAMPLING AT 75 LITERS PER MINUTE TO TOTAL MASS

BASED ON CALCULATED CONVERSION FACTOR (PPM/AB) 1.01144 PERCENT

BASE ON CALIBRATION CONVERSION FACTOR (PPM/AB) .98053 PERCENT

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APPENDIX G

PLOTS OF DROPLET RESIDUAL MASS VERSUS TIME

EVAPORATION EXPERIMENT NO. GLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 45%

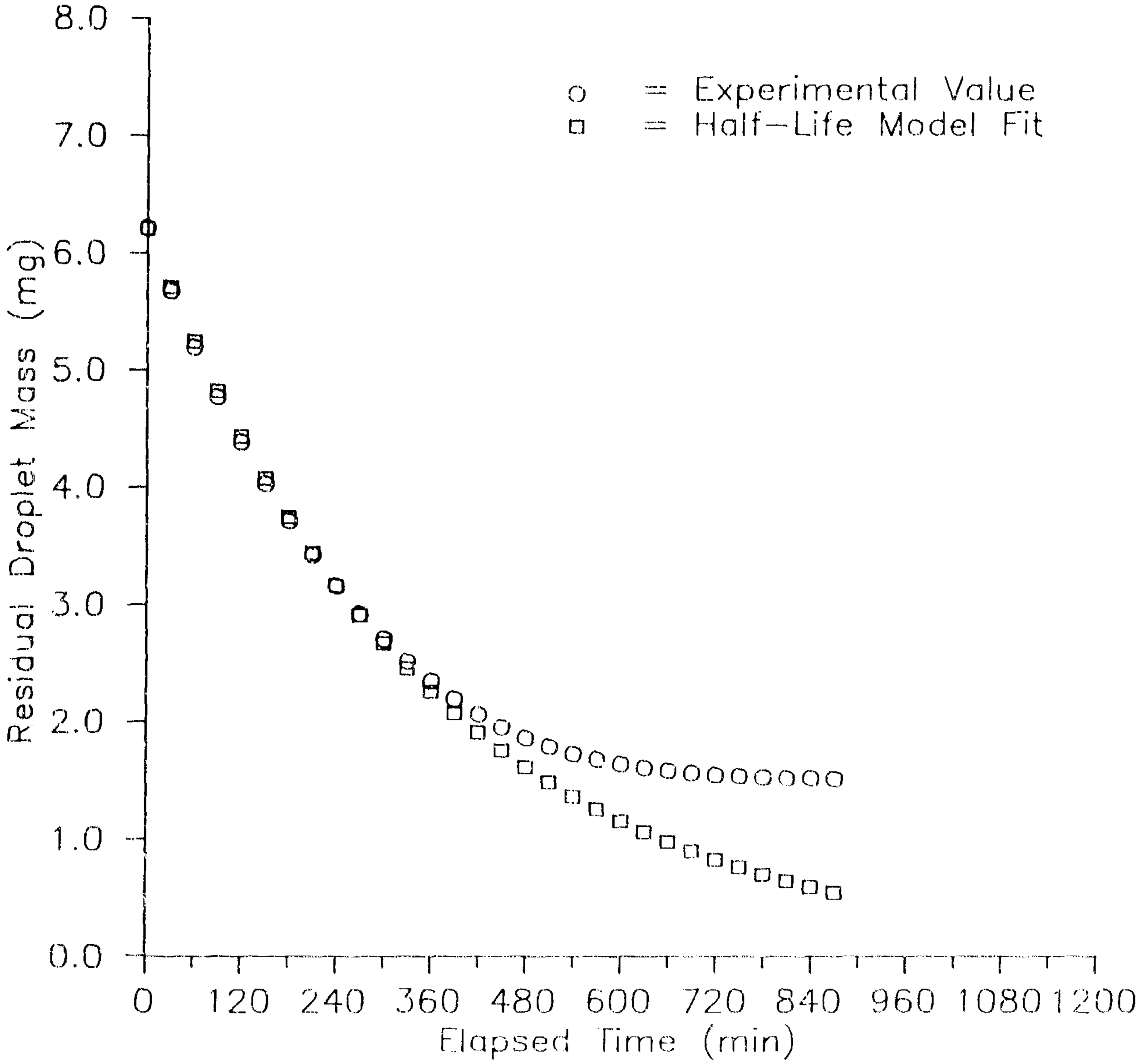

Figure G-1. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

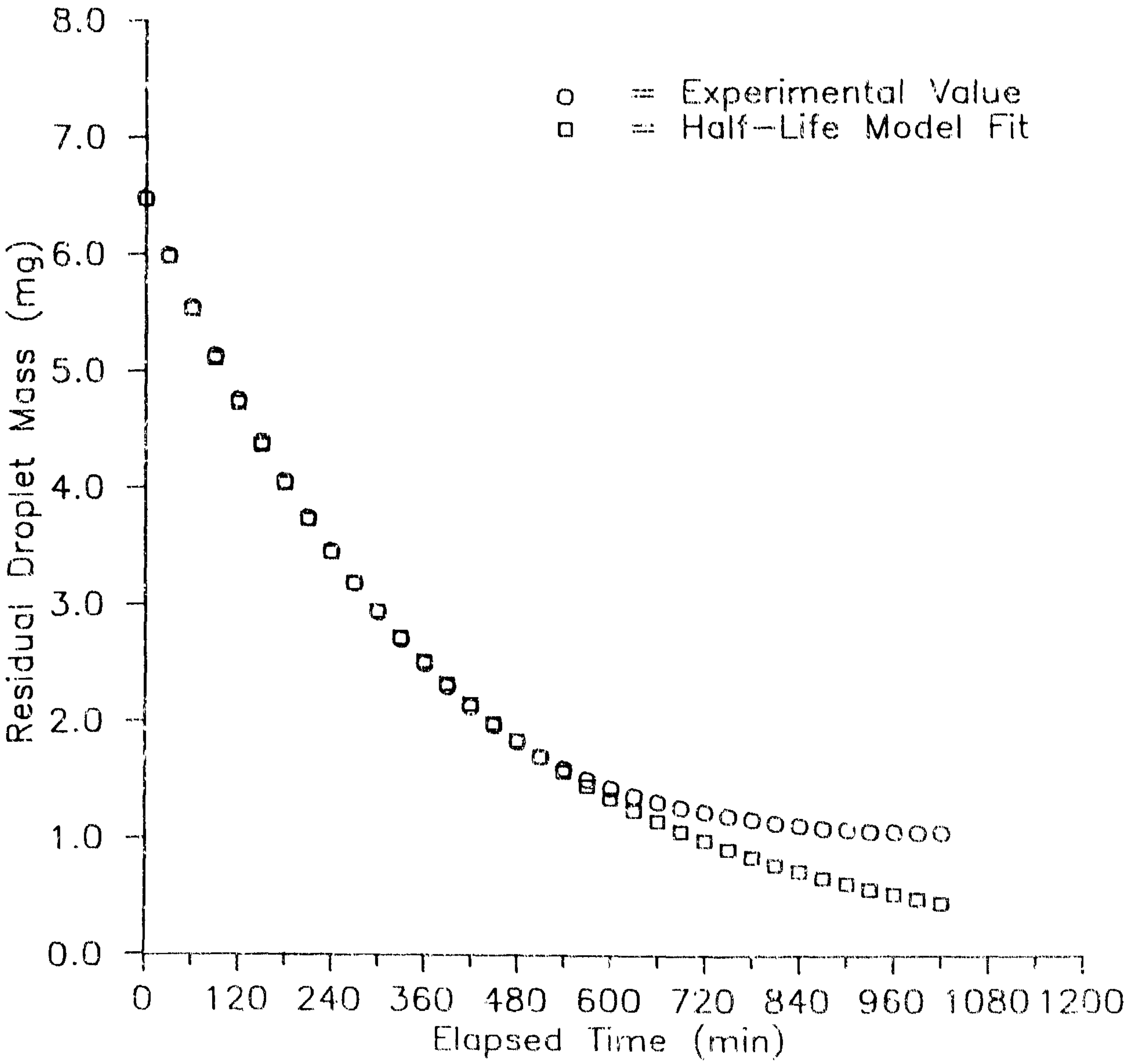

Figure G-2. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

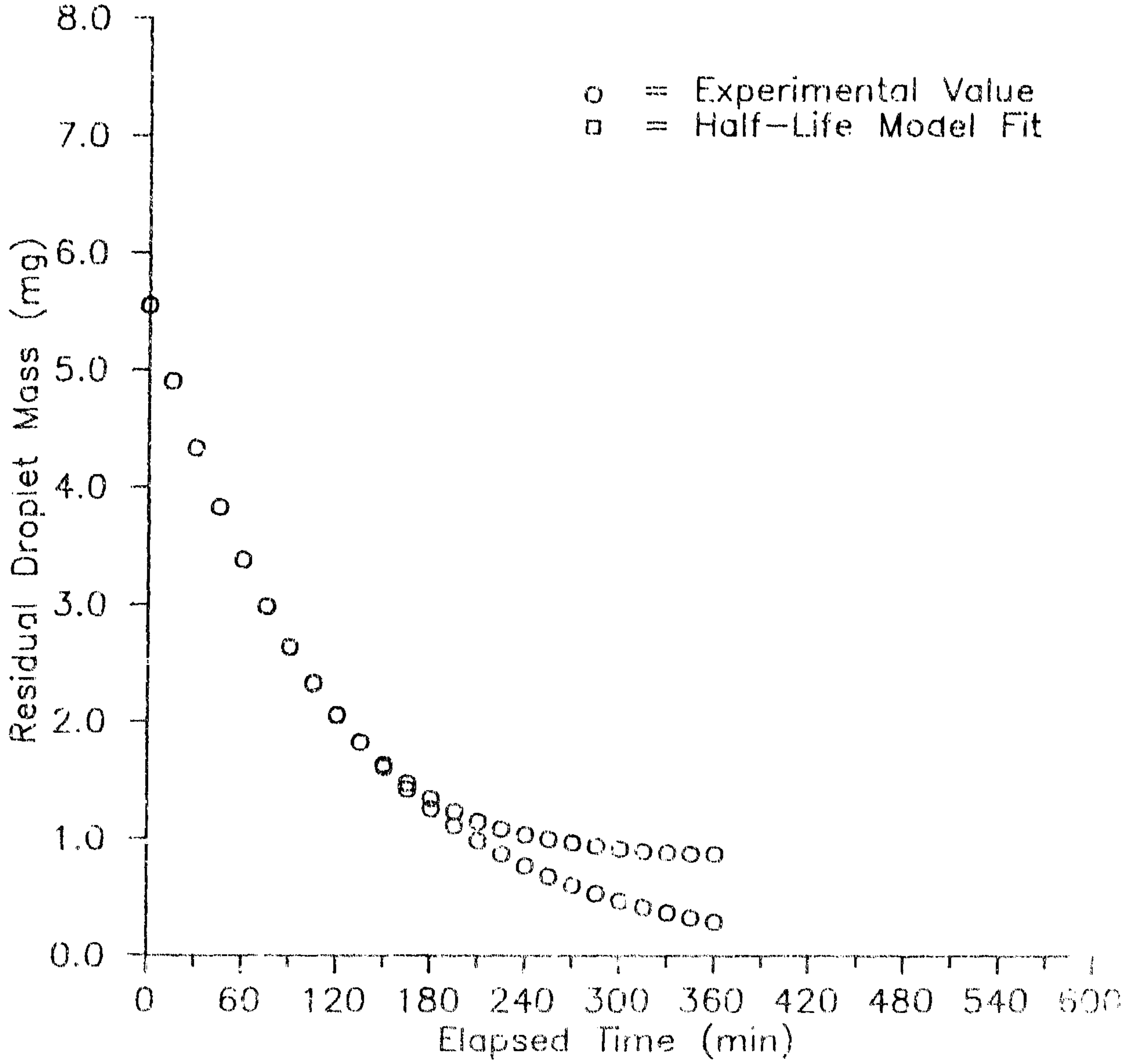

Figure G-3. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

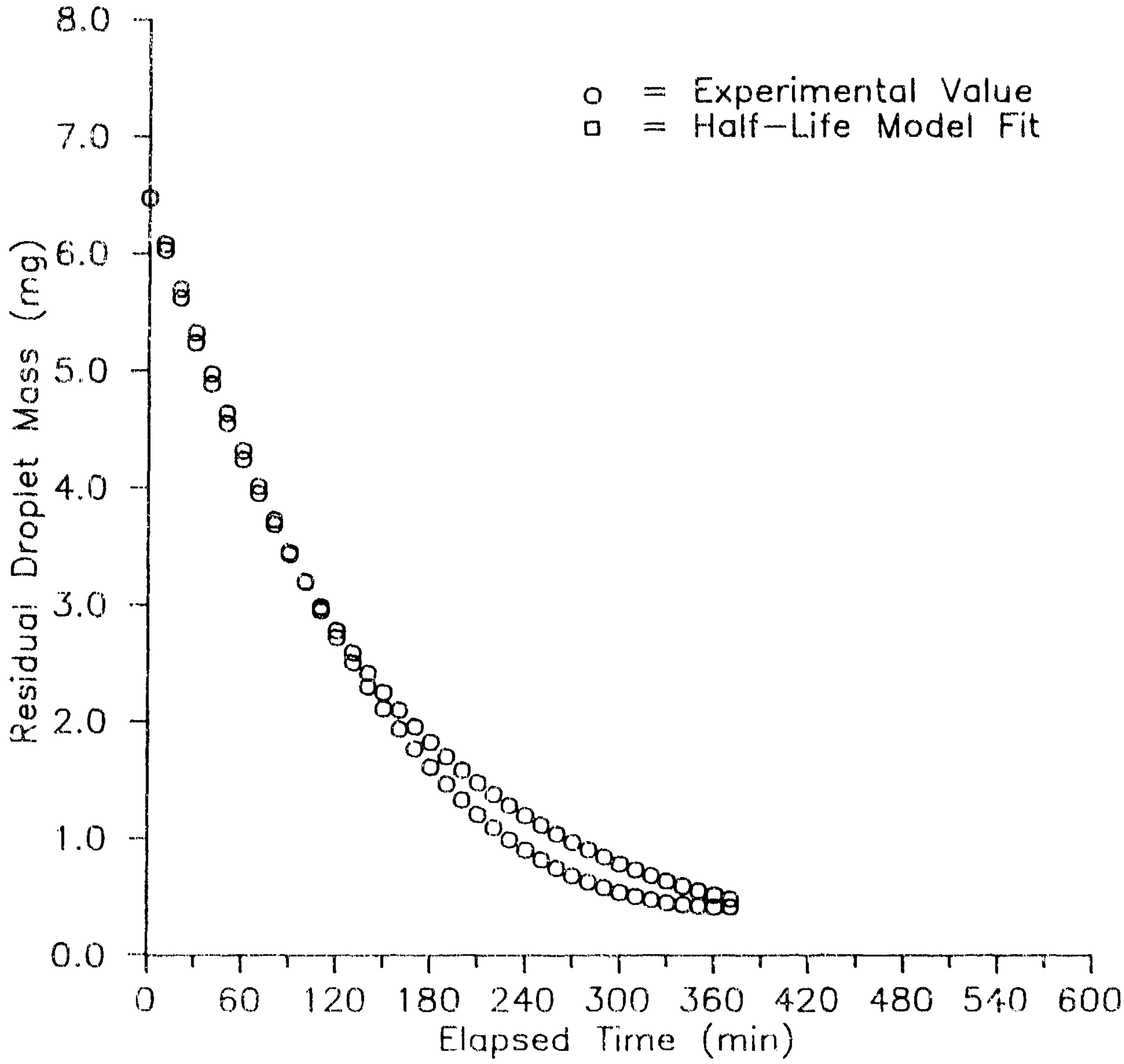

Figure G-4. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 58%

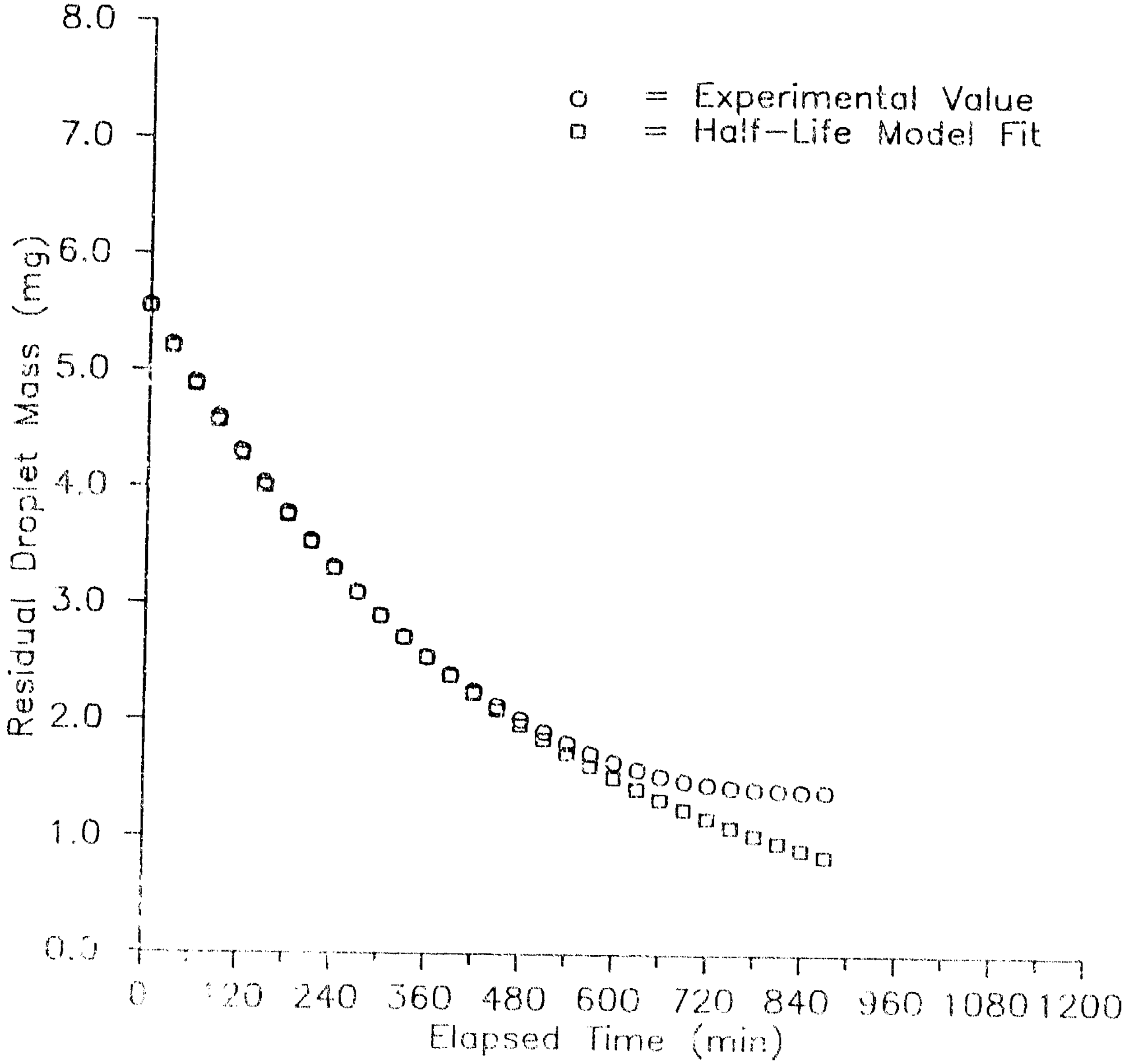

Figure G-5. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

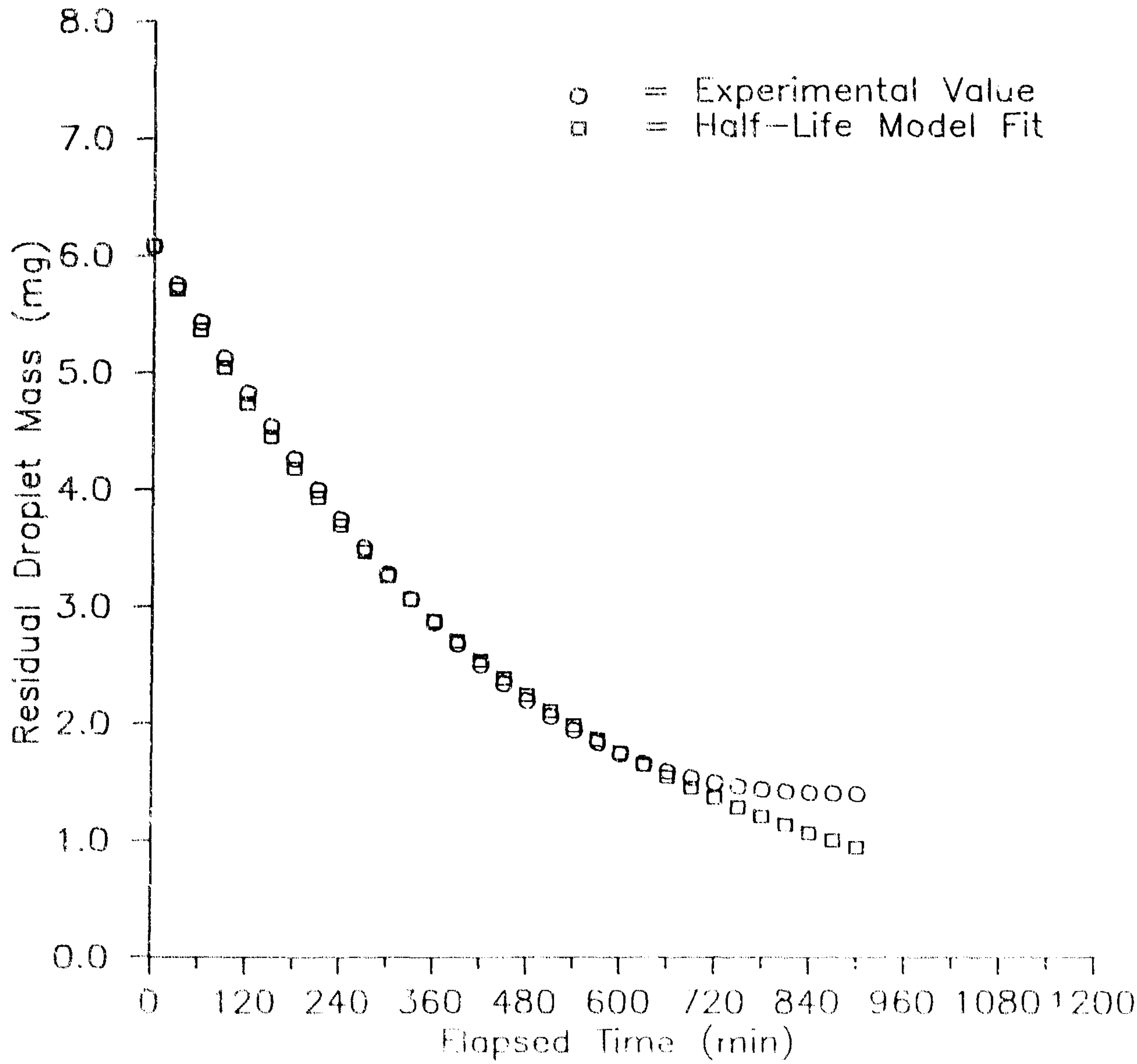

Figure G-6. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

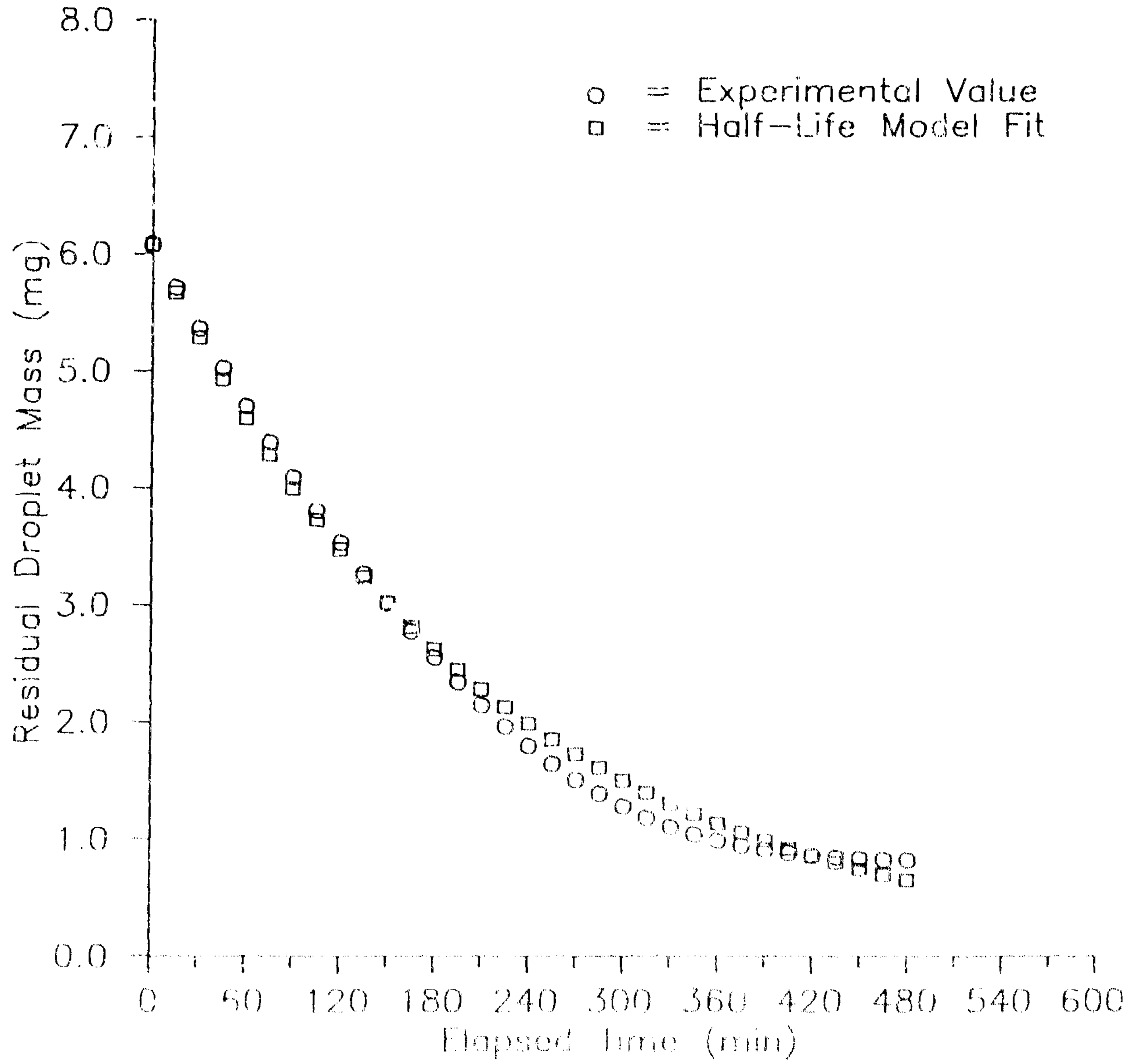

Figure G-7. Droplet Residual Mass Versus Time

EVAPORATION EXPERIMENT NO. GLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

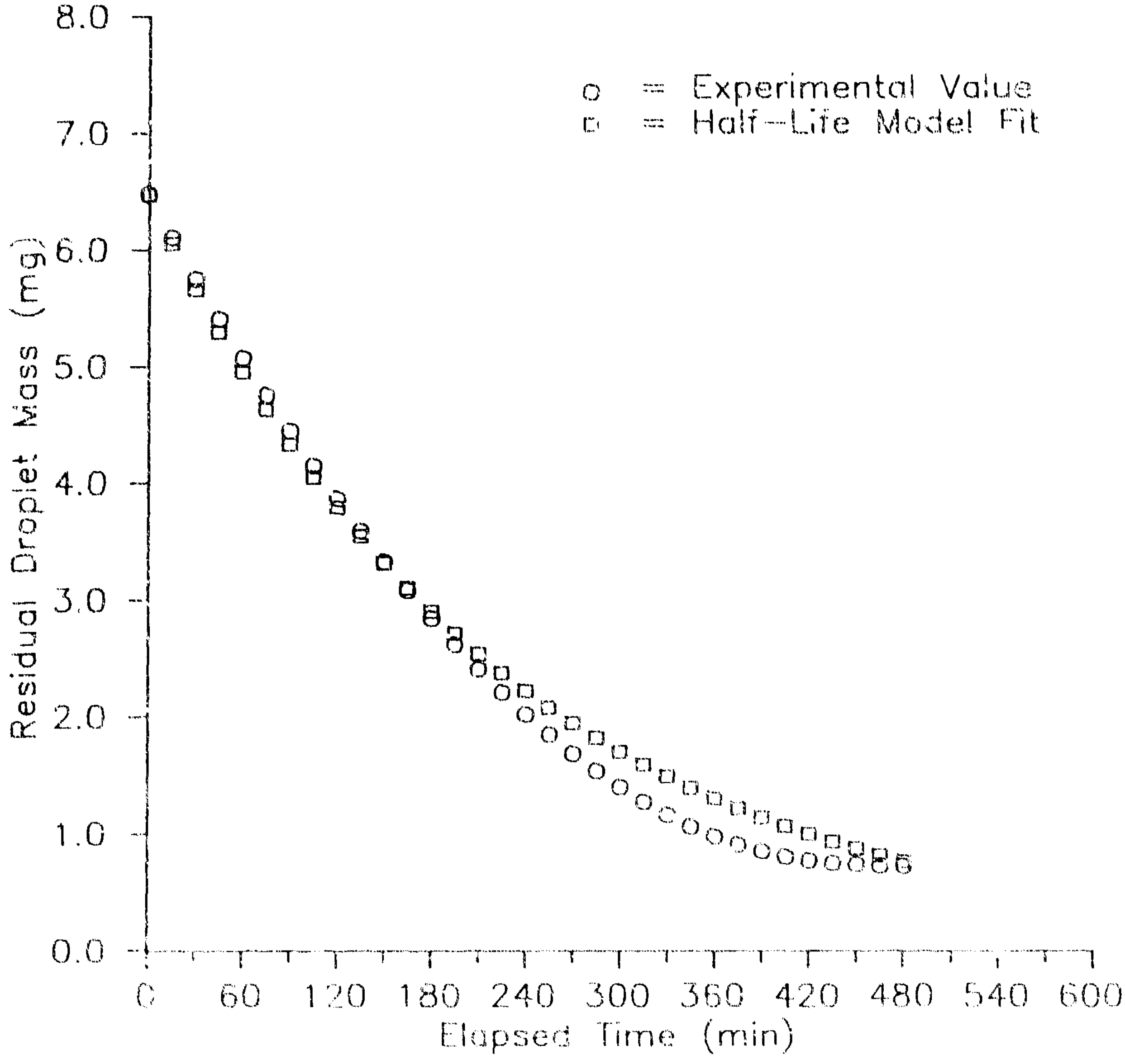

Figure C-8 Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF9 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F. RELATIVE HUMIDITY 44%

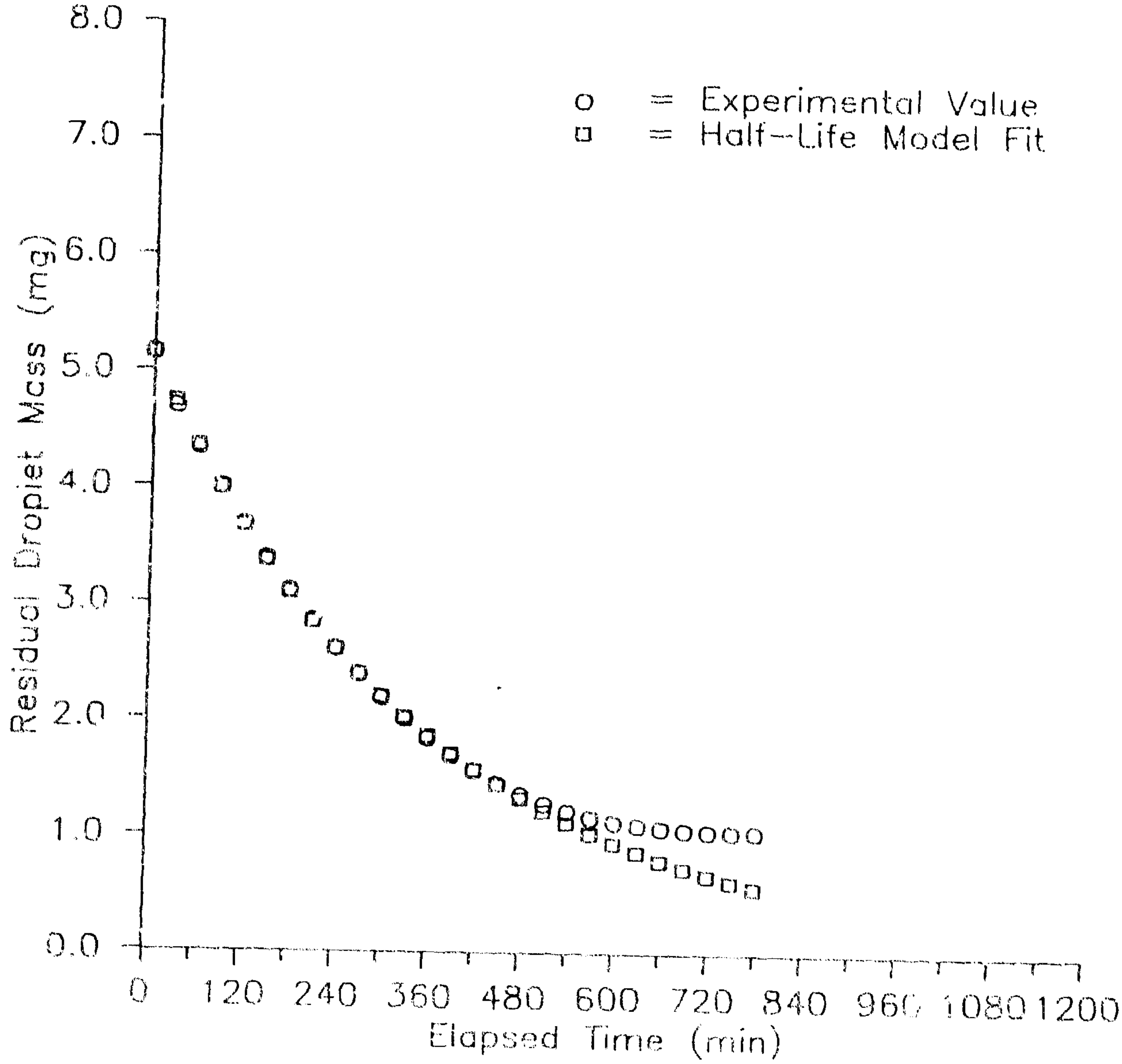

Figure G-9. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF10 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 50 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 2.3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 52%

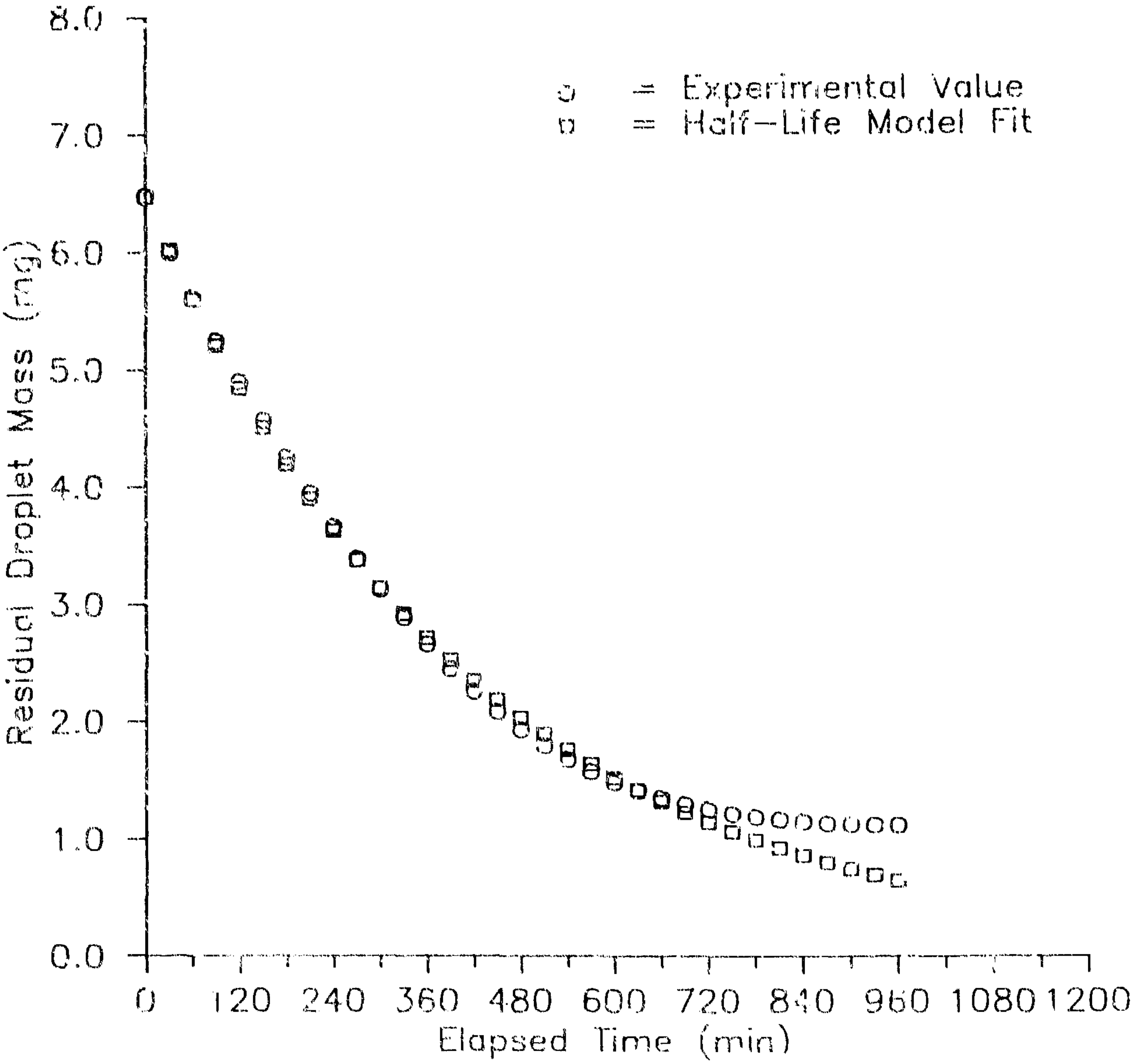

Figure G-10. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF11 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

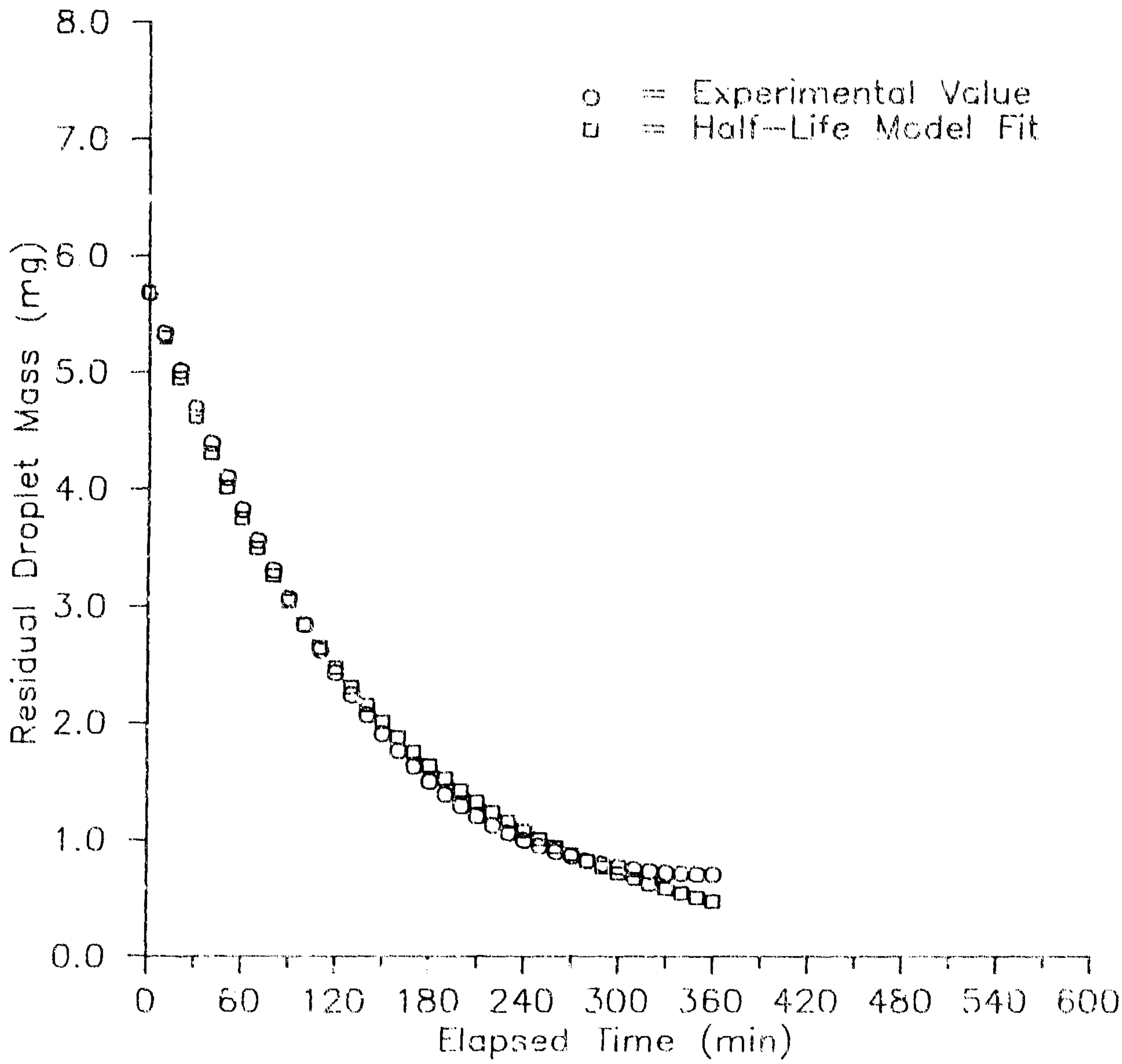

Figure G-11. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF12 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

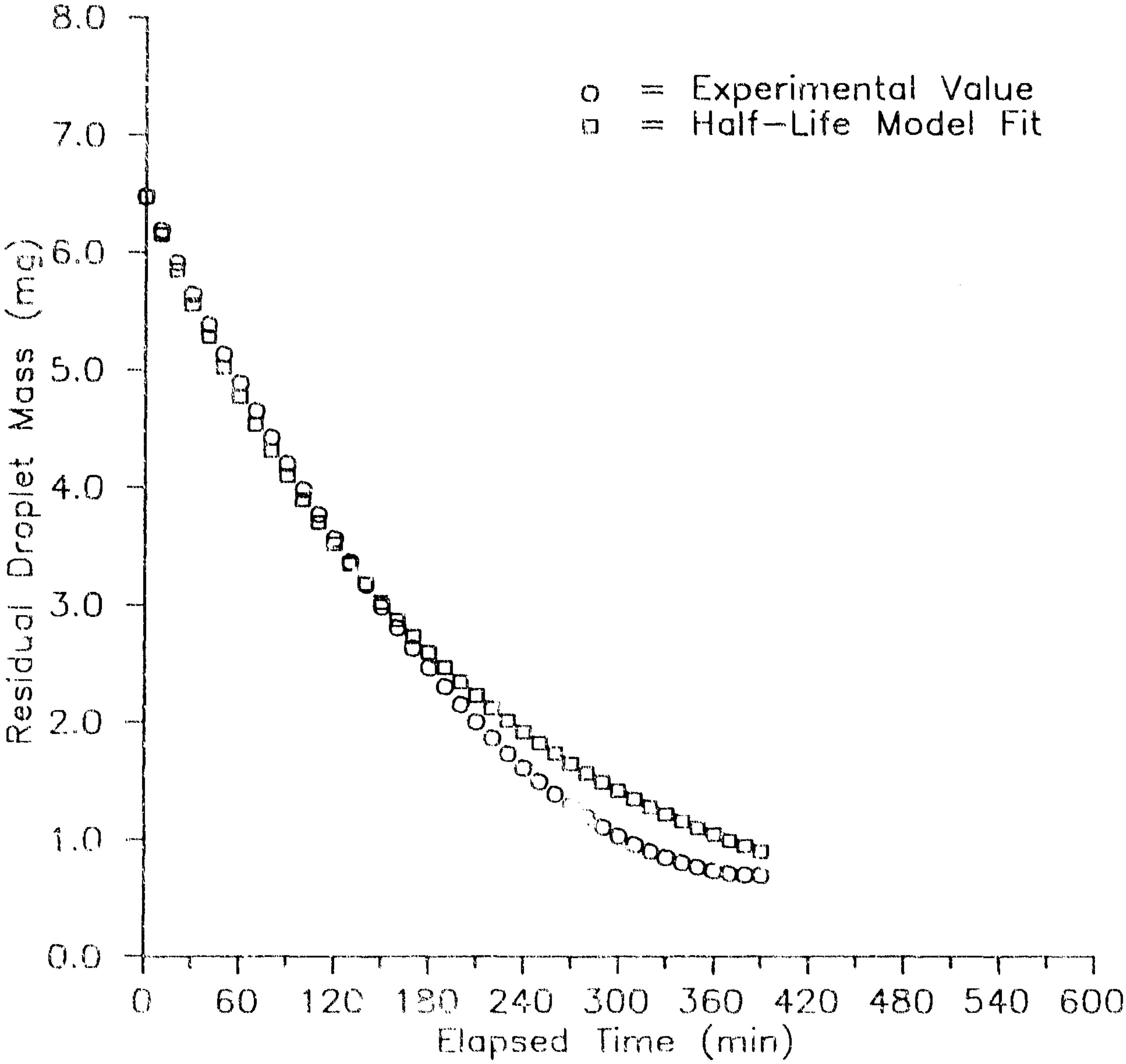

Figure G-12. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF13 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

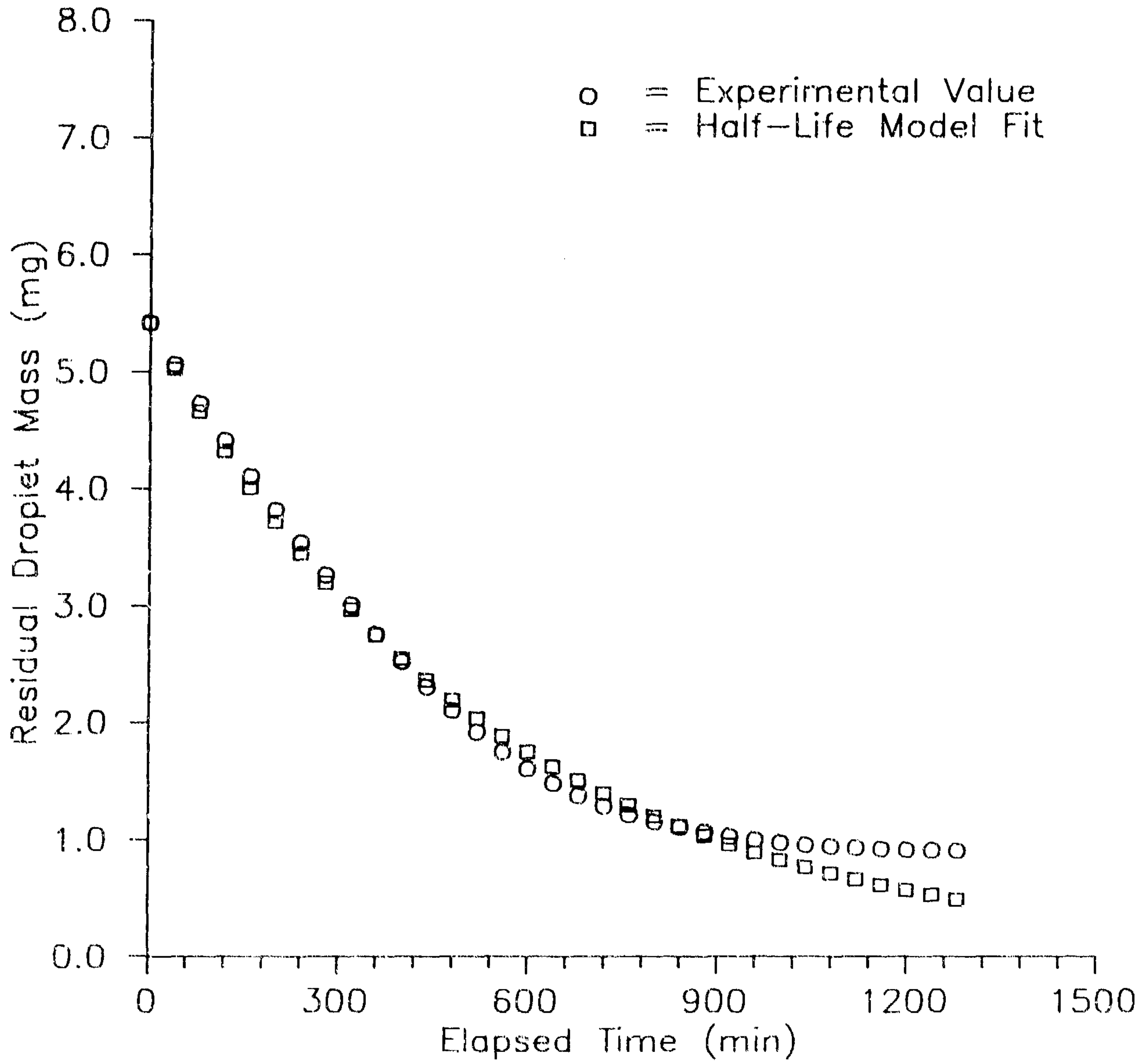

Figure G-13. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF14 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 43%

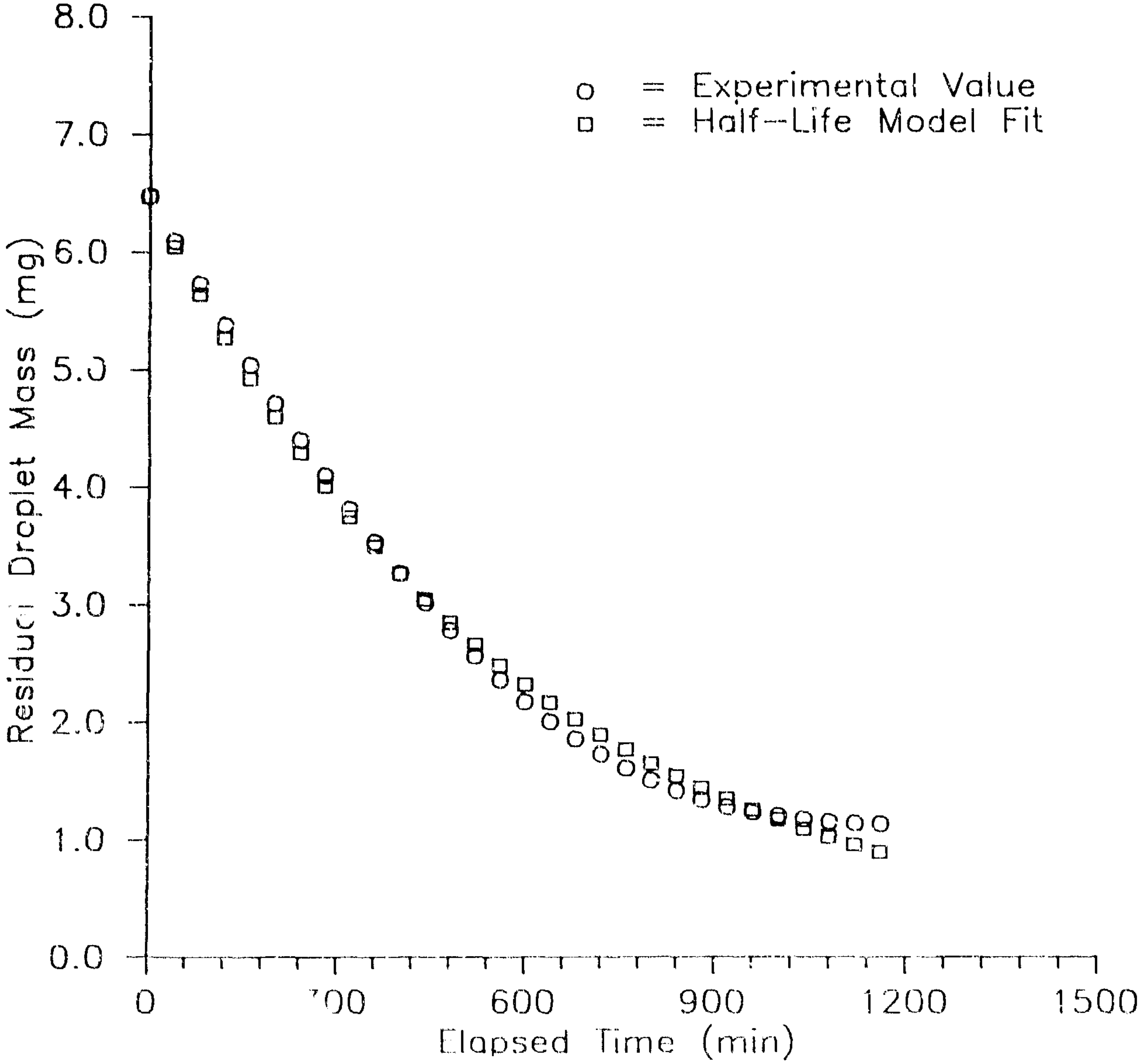

Figure G-14. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO GLF15 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

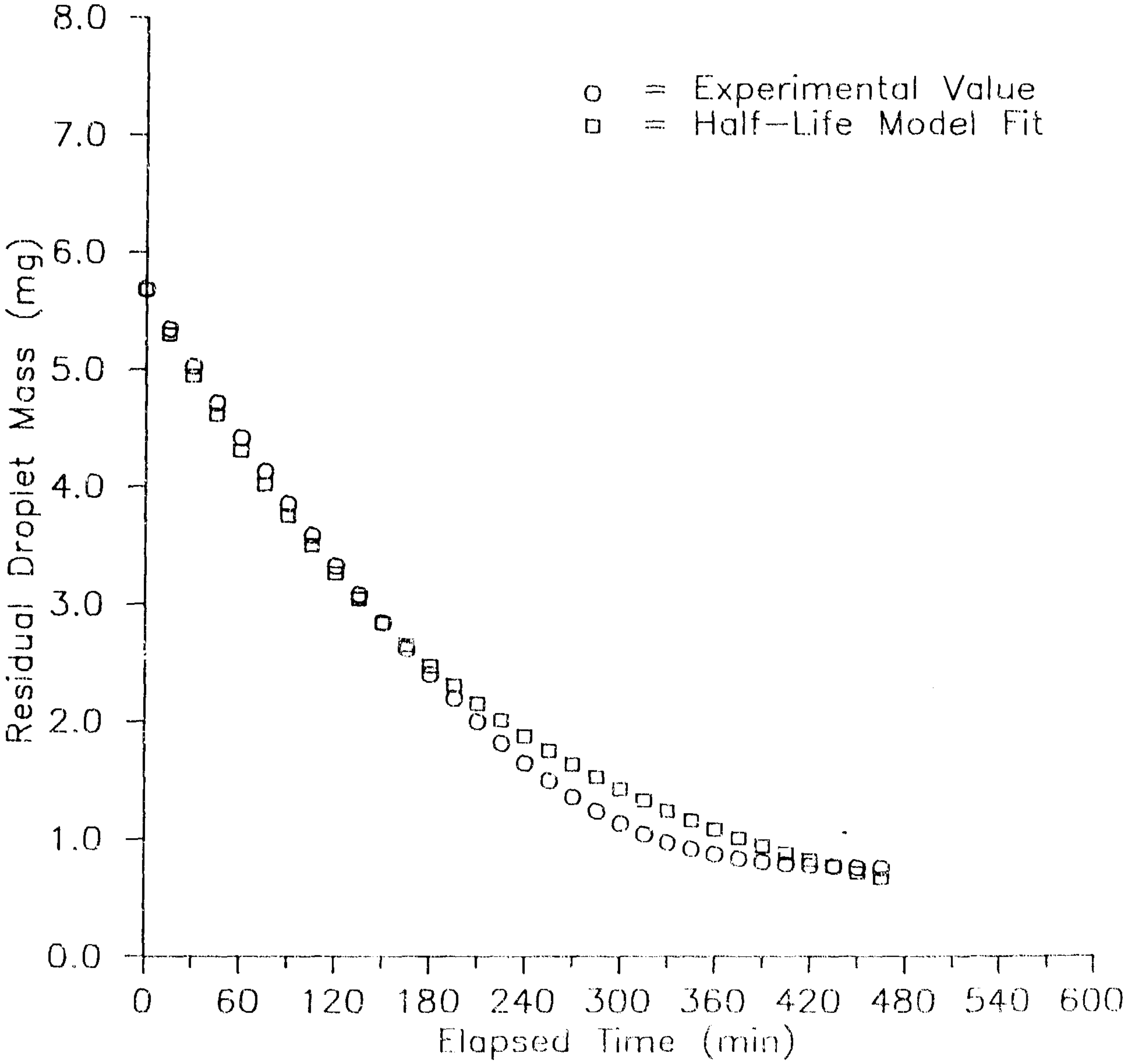

Figure G-15. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. GLF16 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

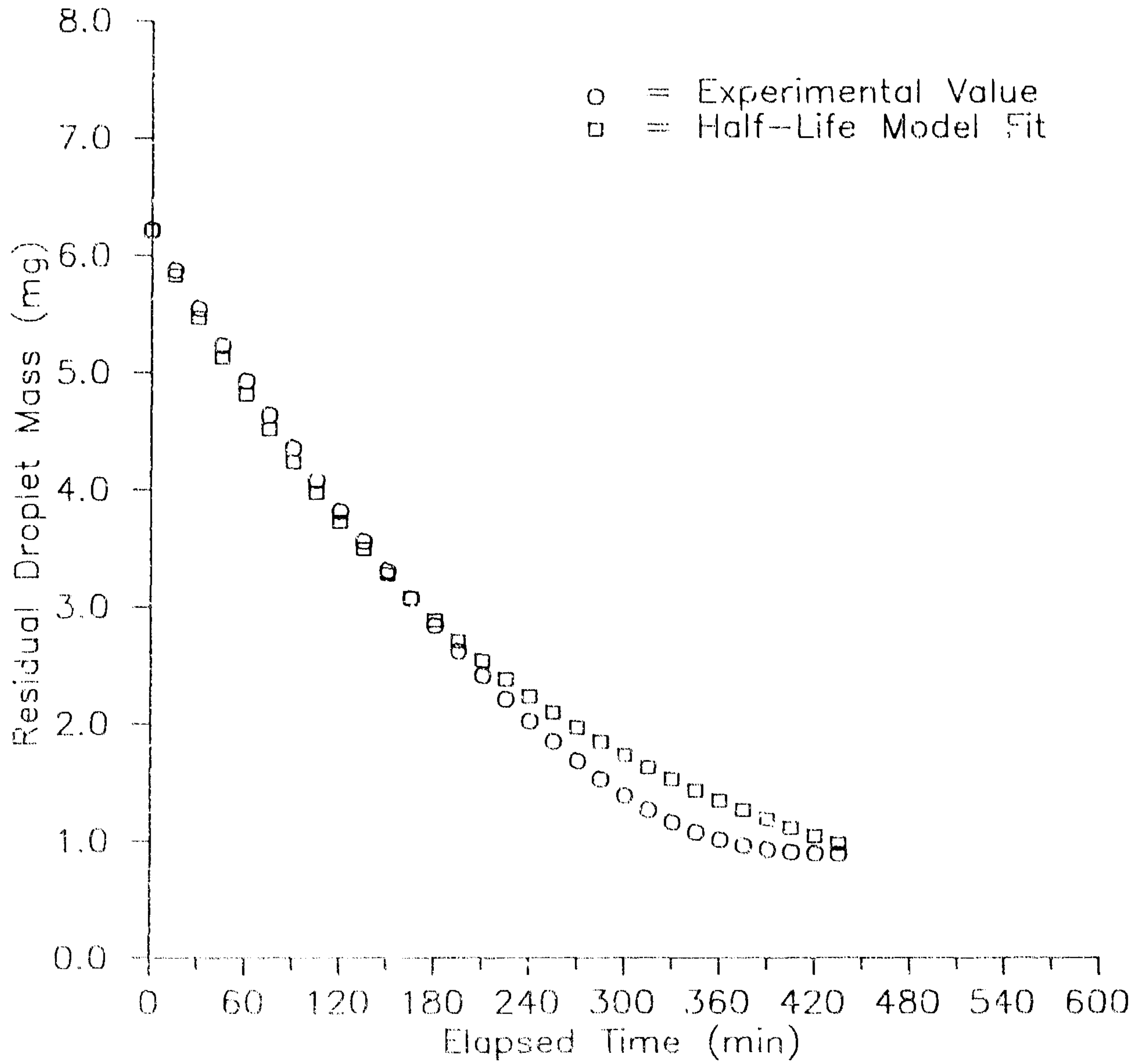

Figure G-16. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. BLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 3 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

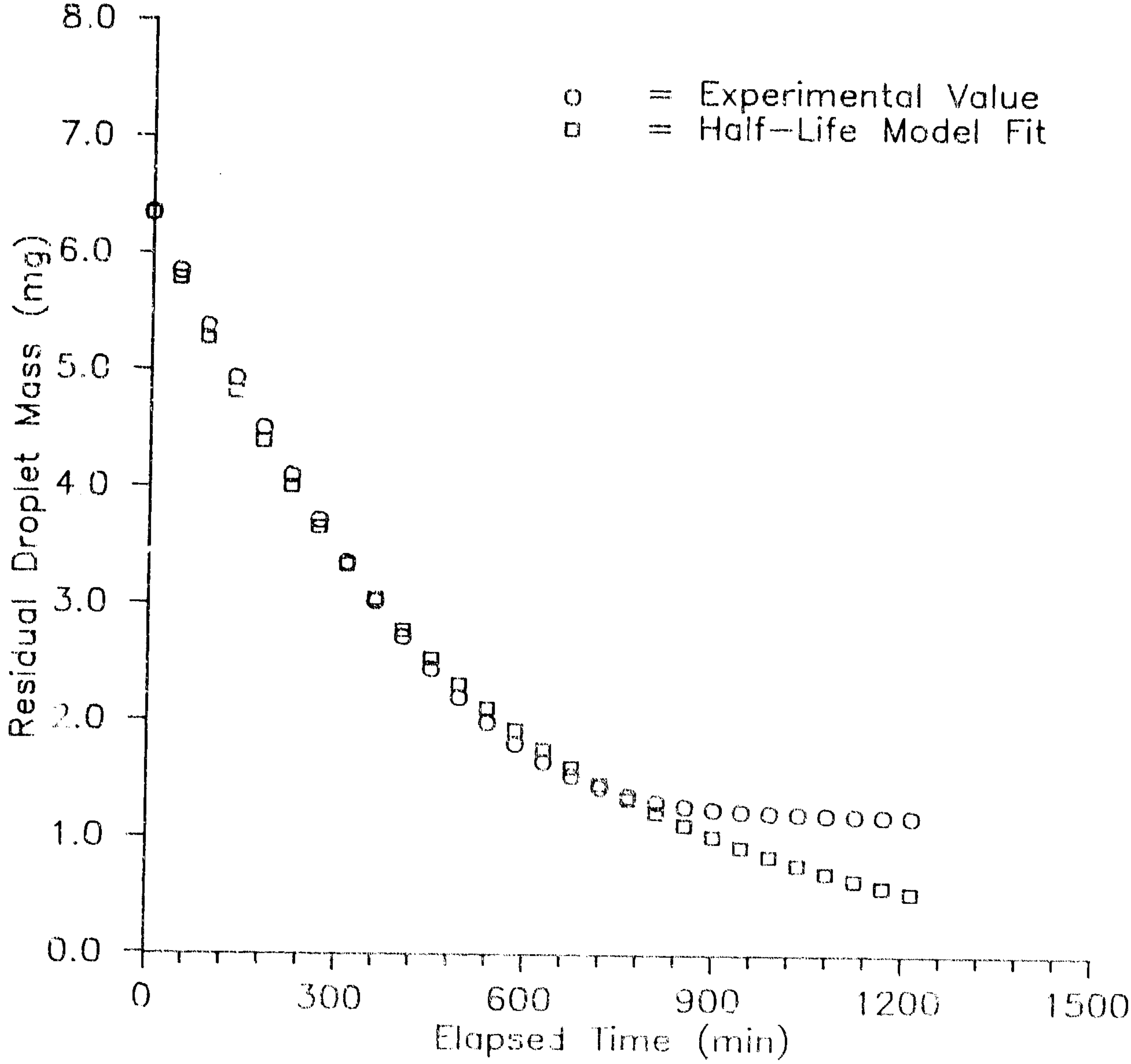

Figure G-17. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. BLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

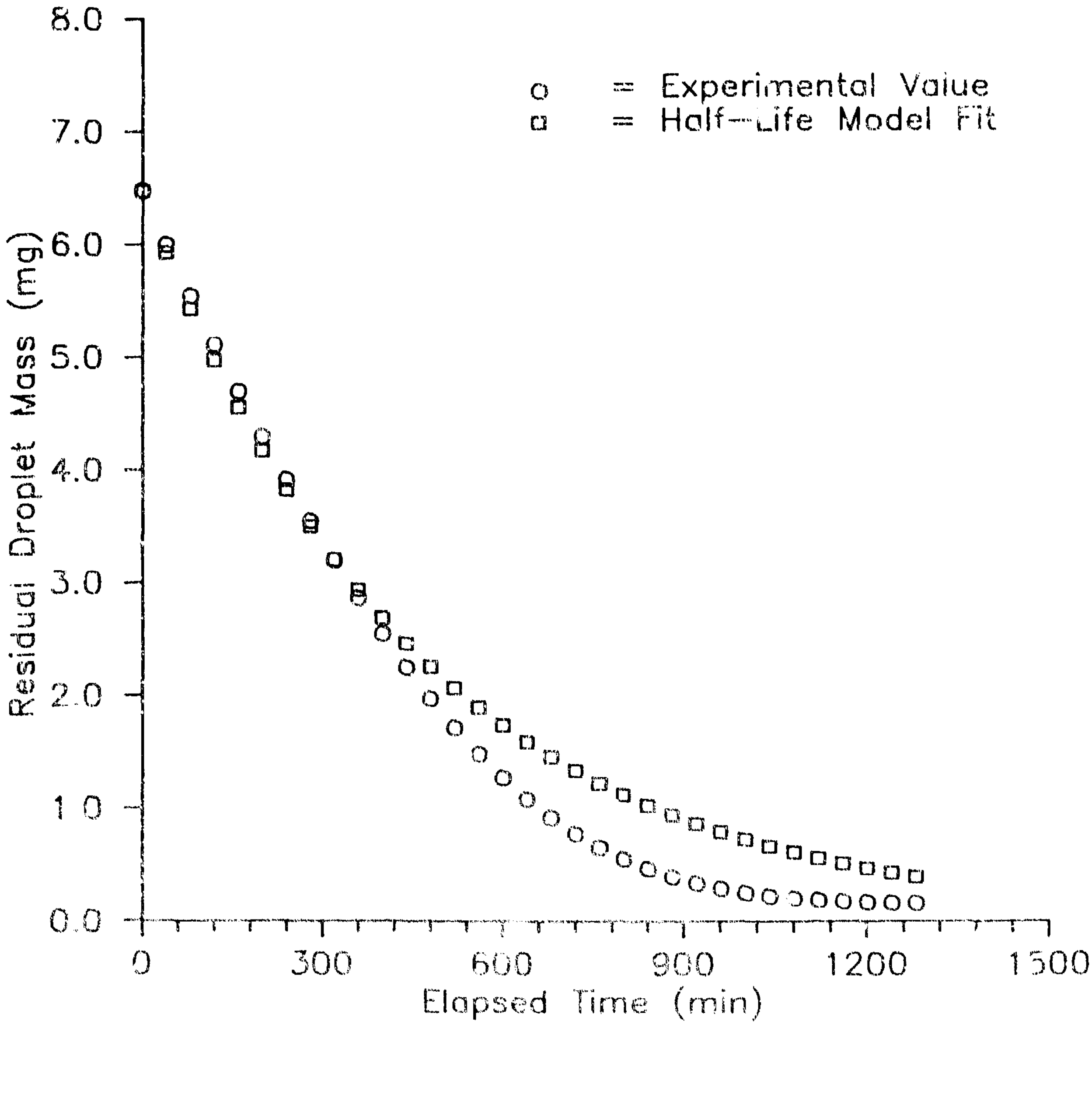

Figure G-18. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. BLF3   SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA.,   100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH,   AIR TEMPERATURE 60 DEG F.,   RELATIVE HUMIDITY 37%

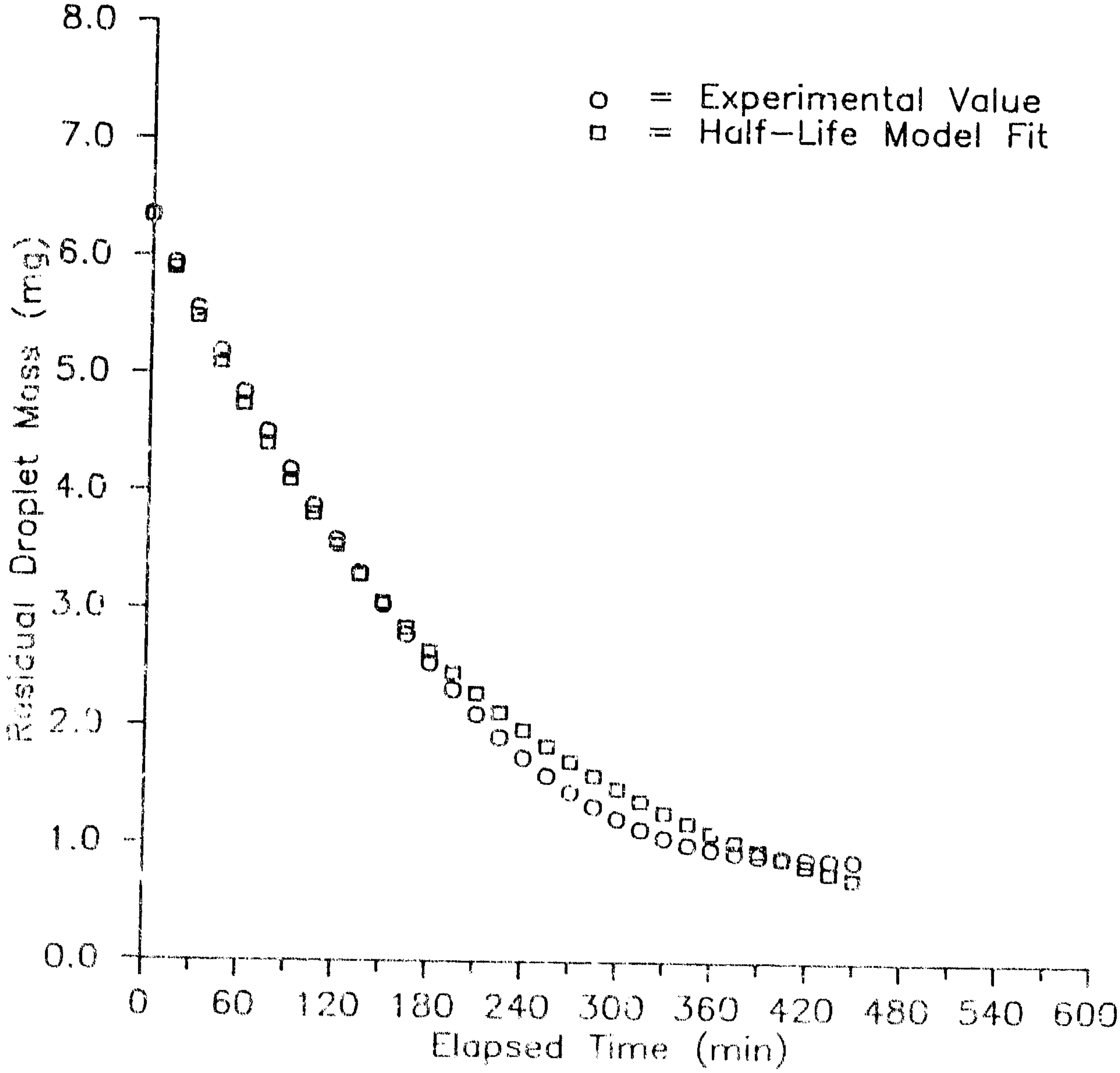

Figure G-19   Droplet Residual Mass Versus Time

EVAPORATION EXPERIMENT NO. BLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 20%

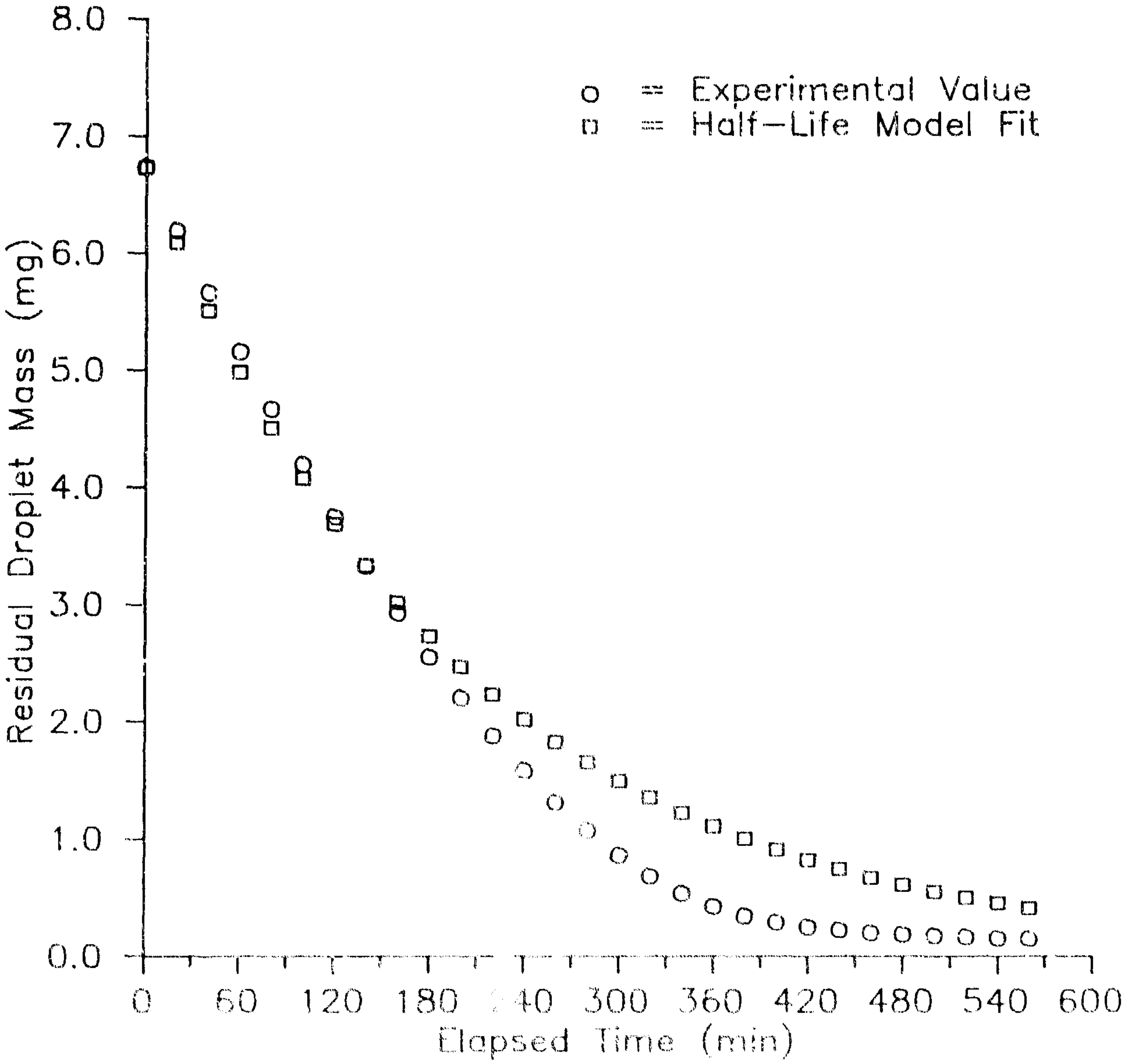

Figure G-20. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. BLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

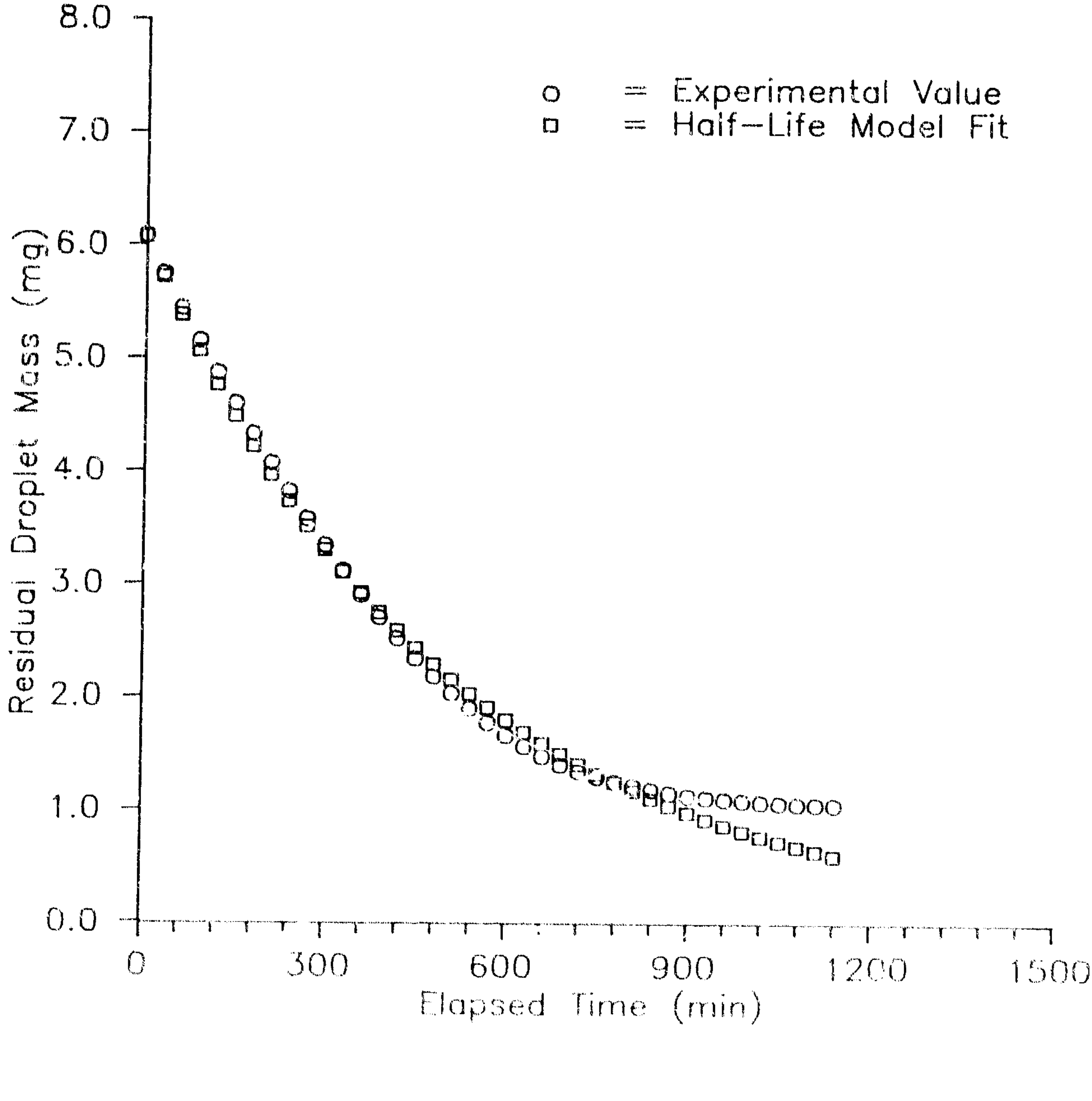

Figure G-21. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. BLF6 SERIES IB 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

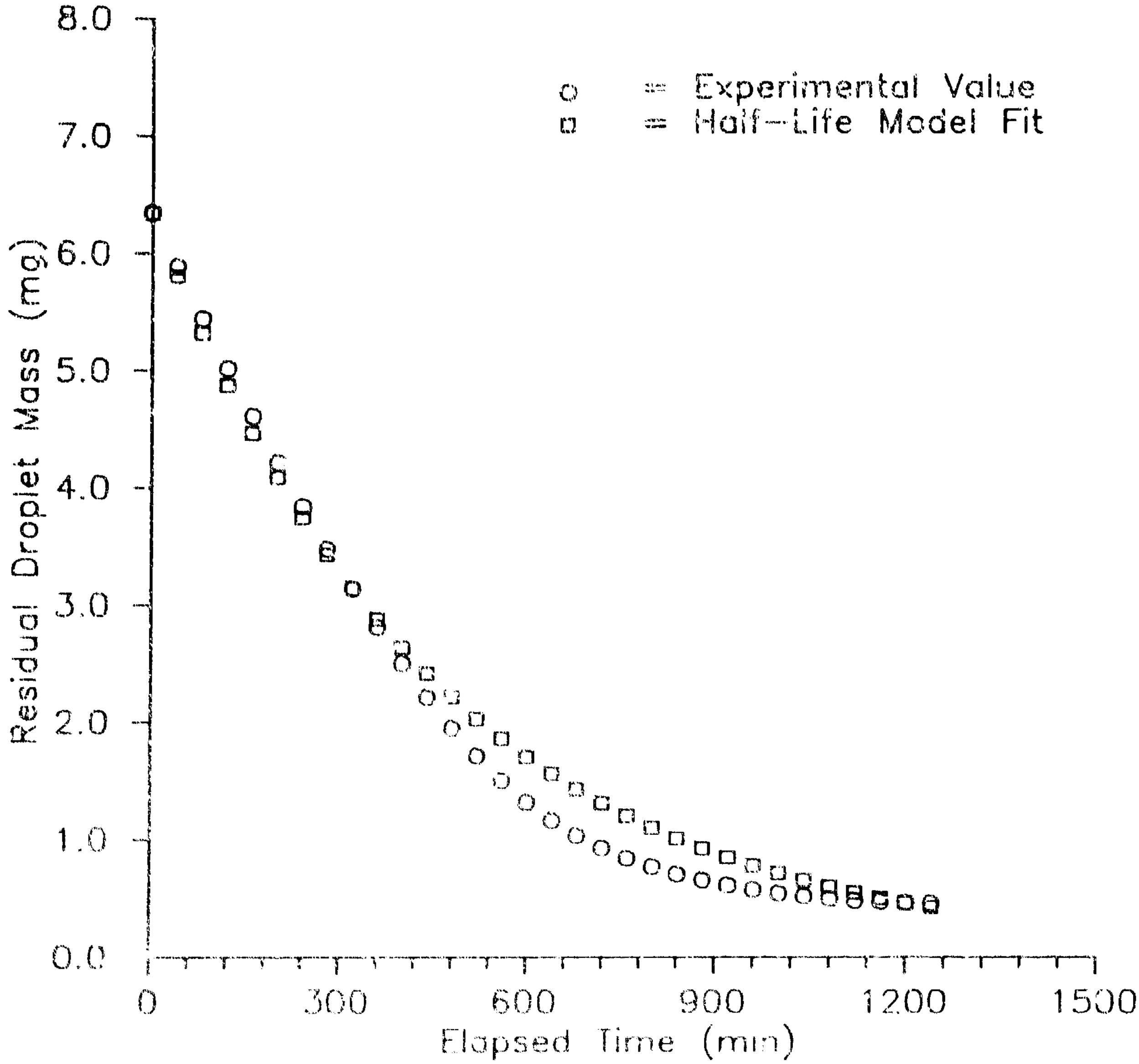

Figure G-22 Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. BLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

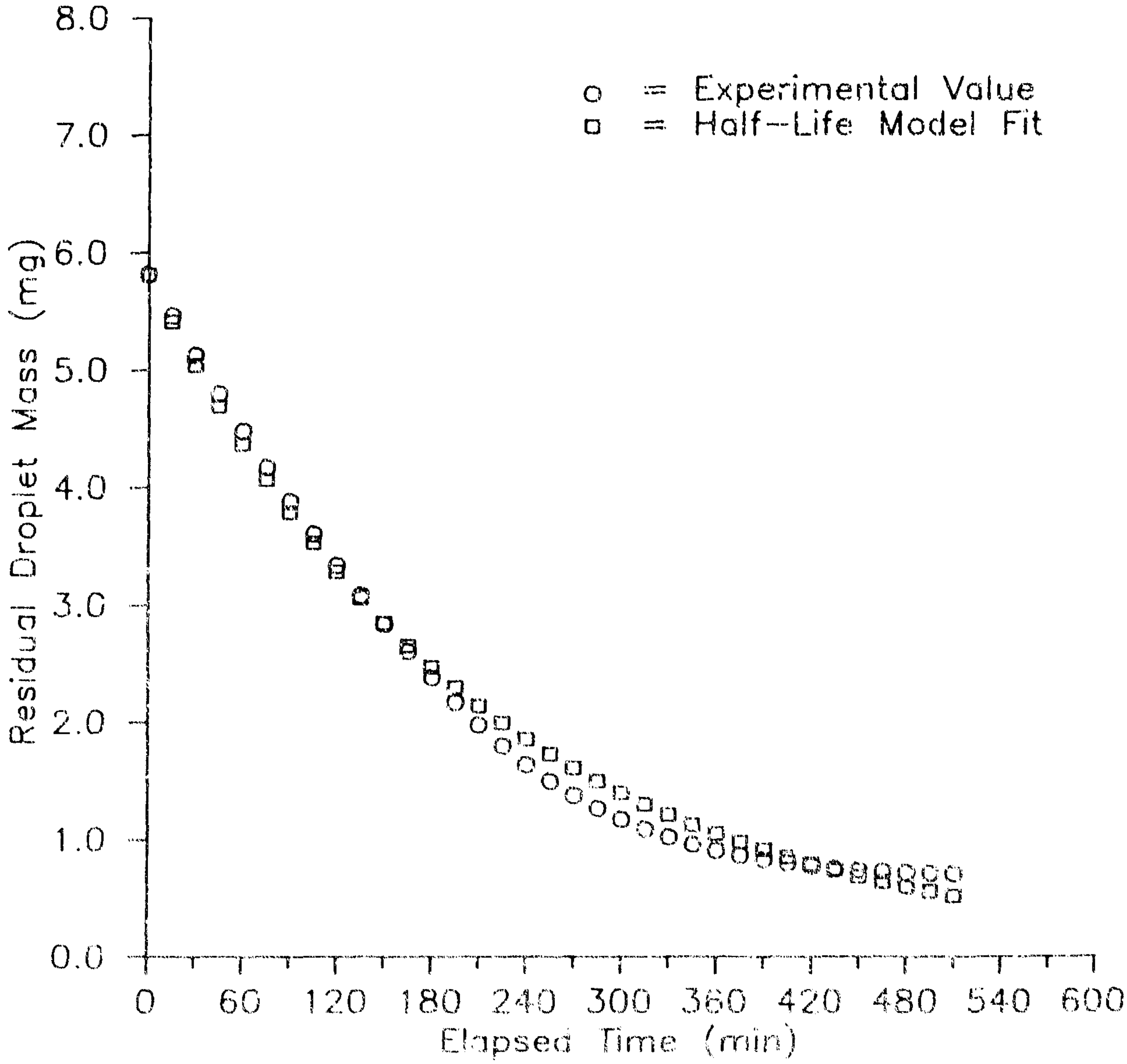

Figure G-23. Droplet Residual Mass Versus Time.

EVAPORATION EXPERIMENT NO. BLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

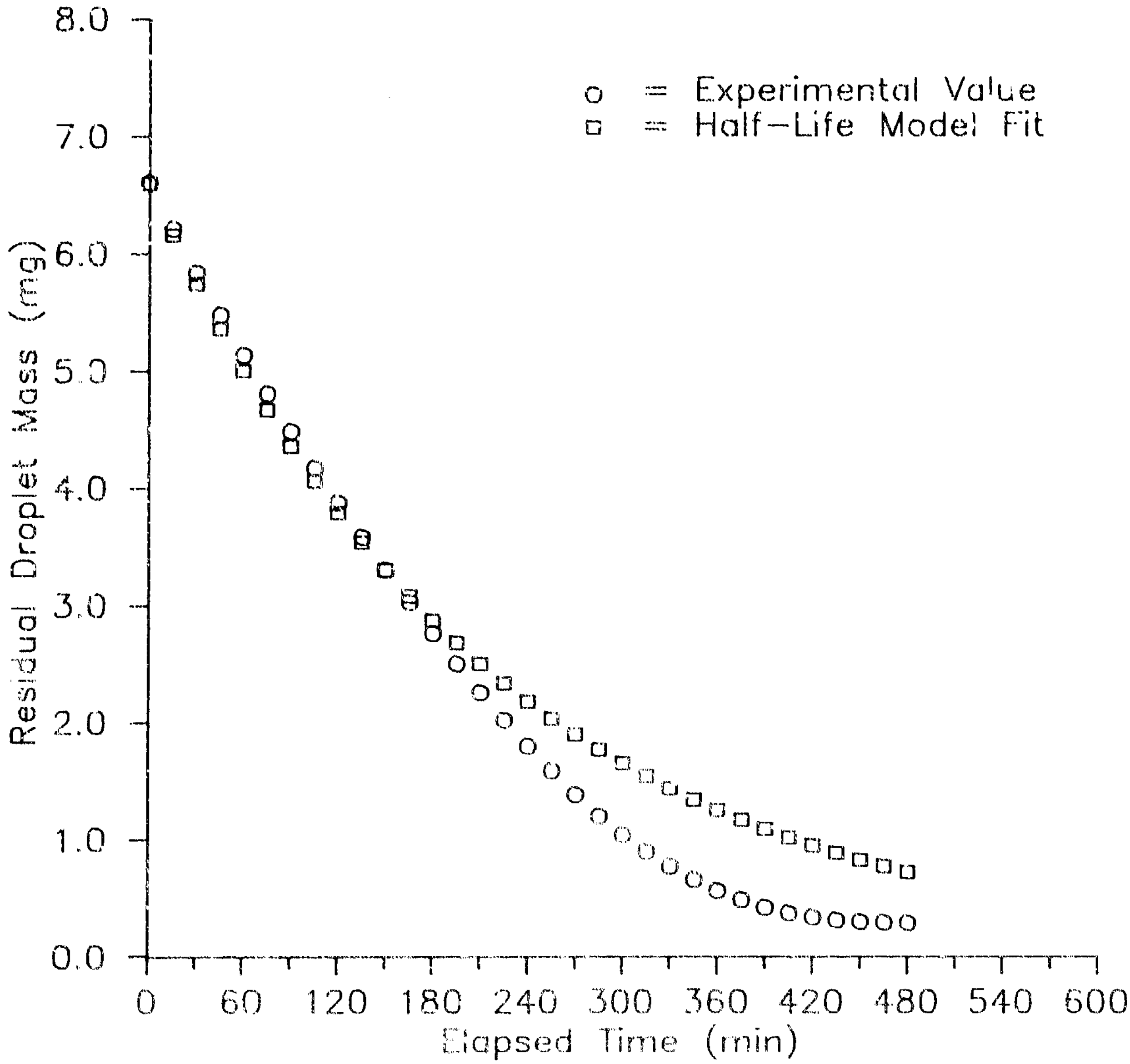

Figure G-24. Droplet Residual Mass Versus Time.

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APPENDIX H

PLOTS OF DROPLET EVAPORATION RATE VERSUS TIME

EVAPORATION EXPERIMENT NO. GLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 45%

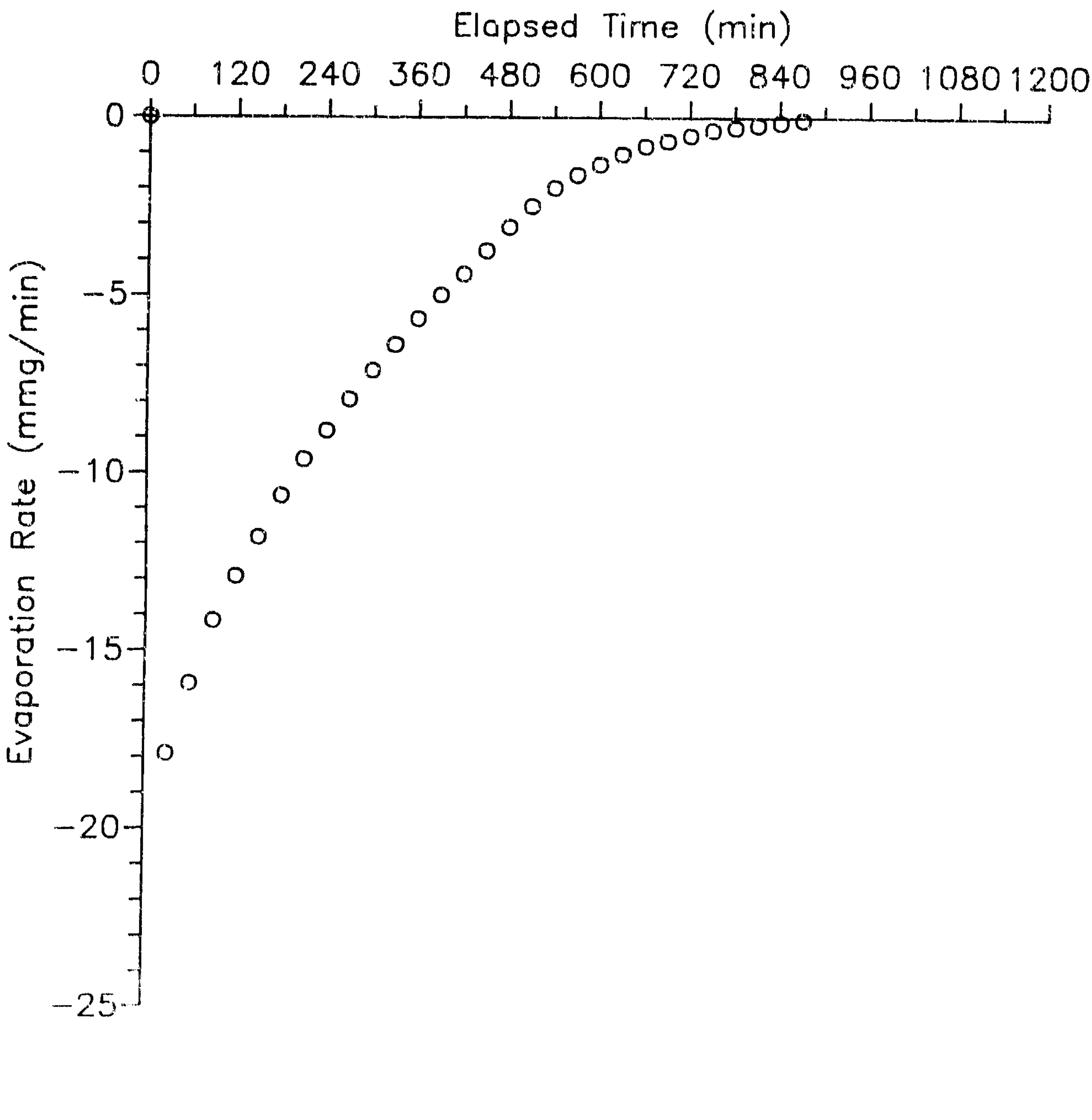


Figure H−1. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 30%

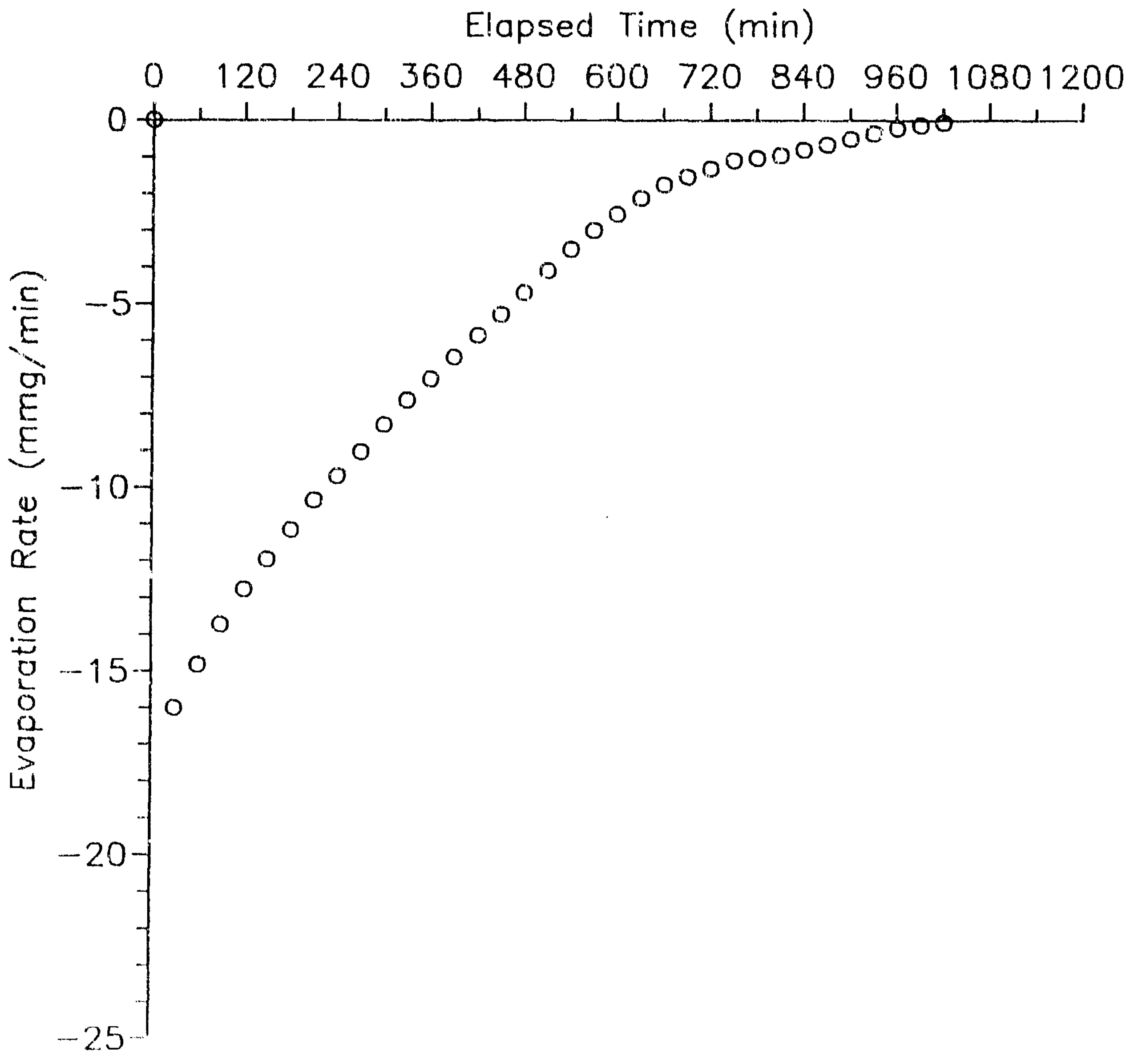


Figure H-2. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

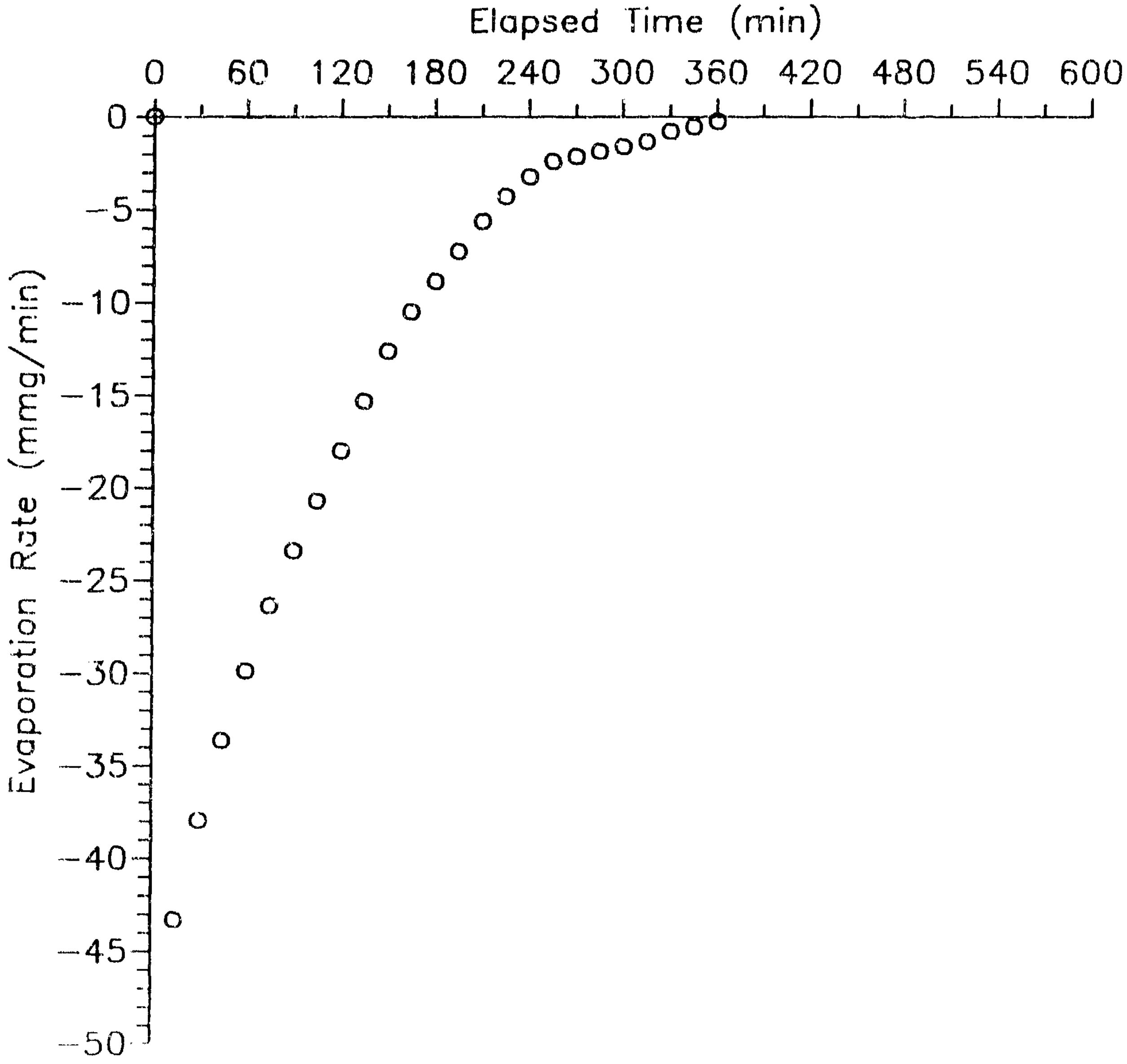


Figure H-3. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

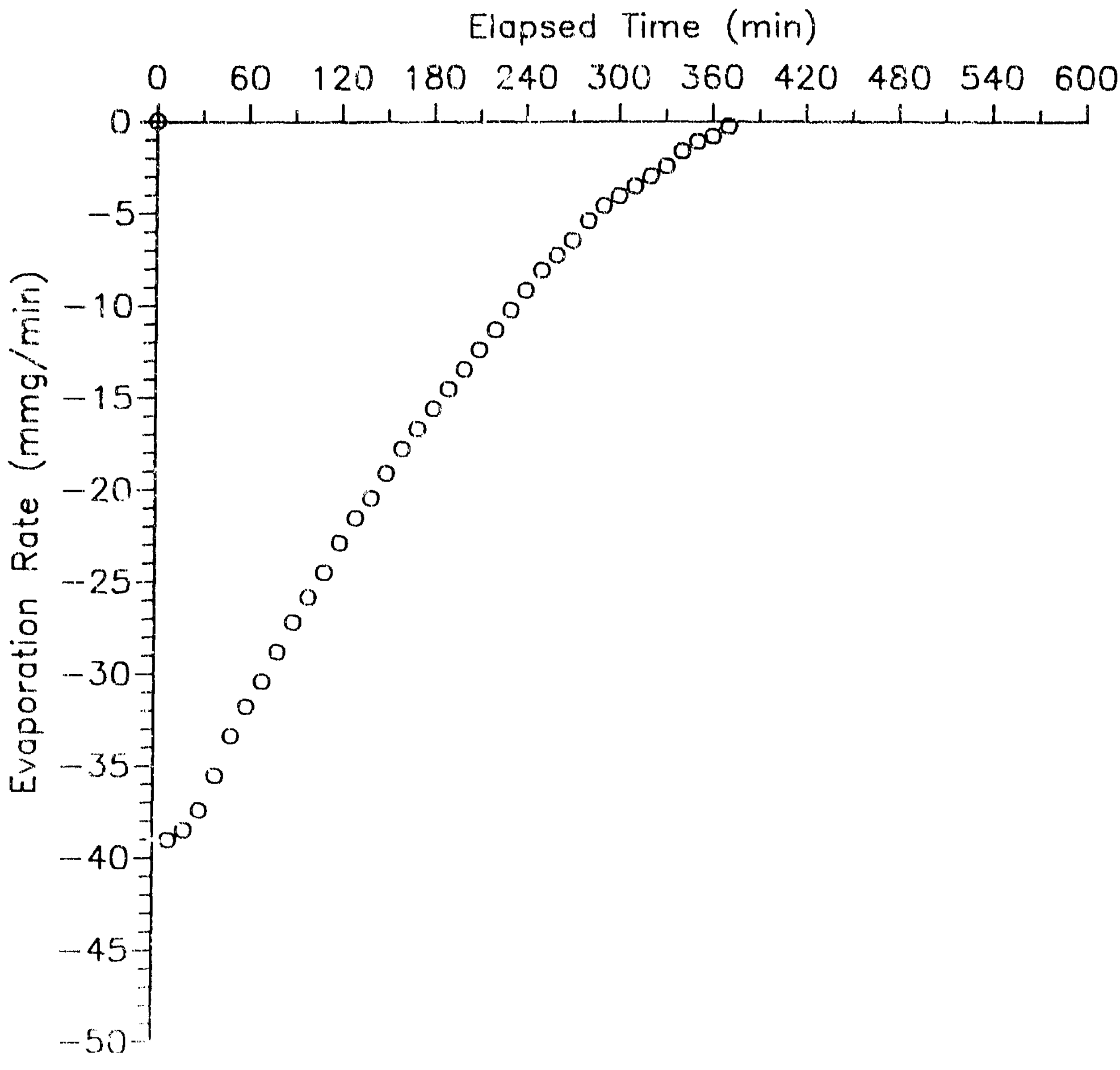


Figure H-4. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 58%

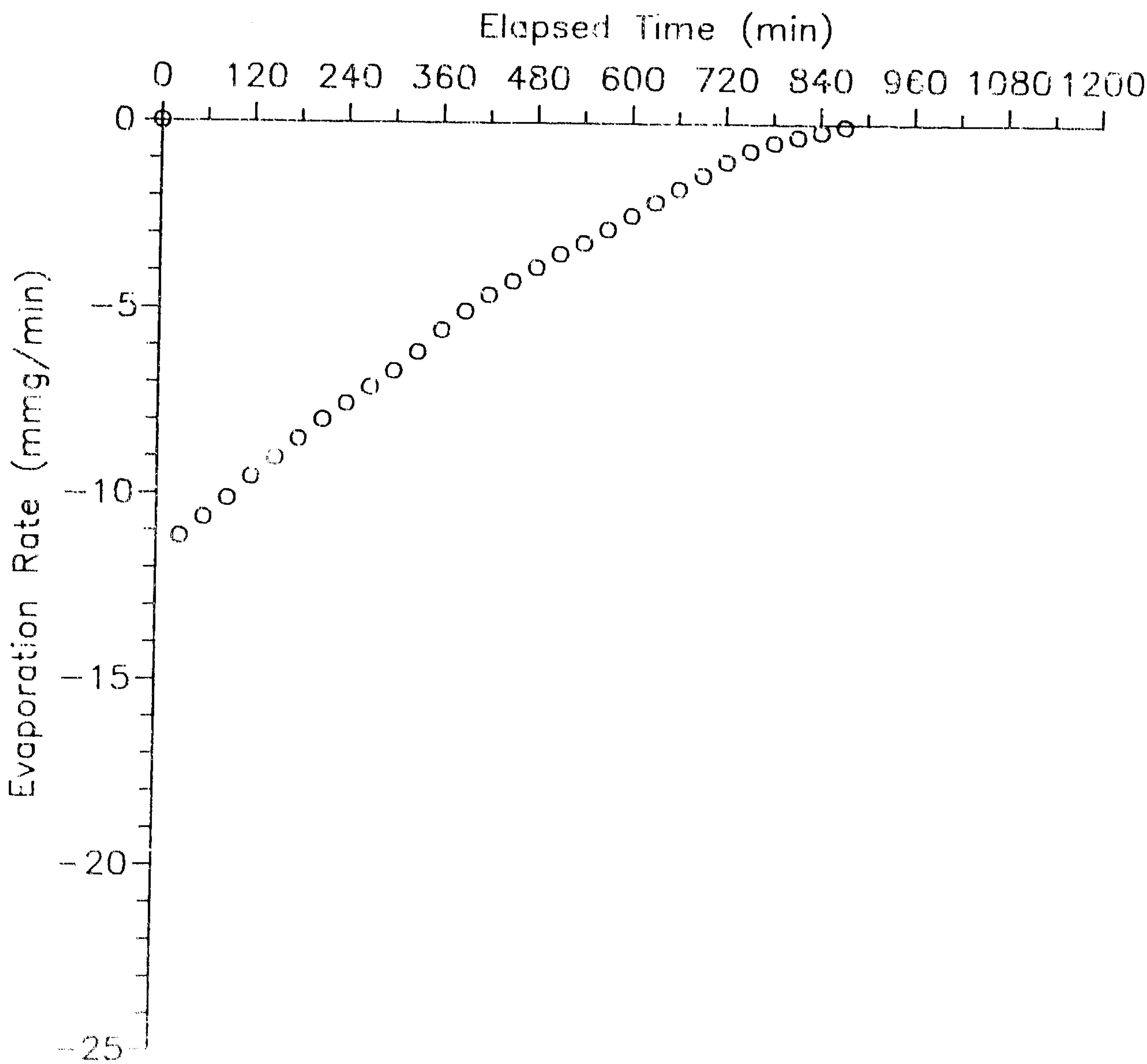


Figure H-5. Droplet Evaporation Rate Versus Time

EVAPORATION EXPERIMENT NO. GLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

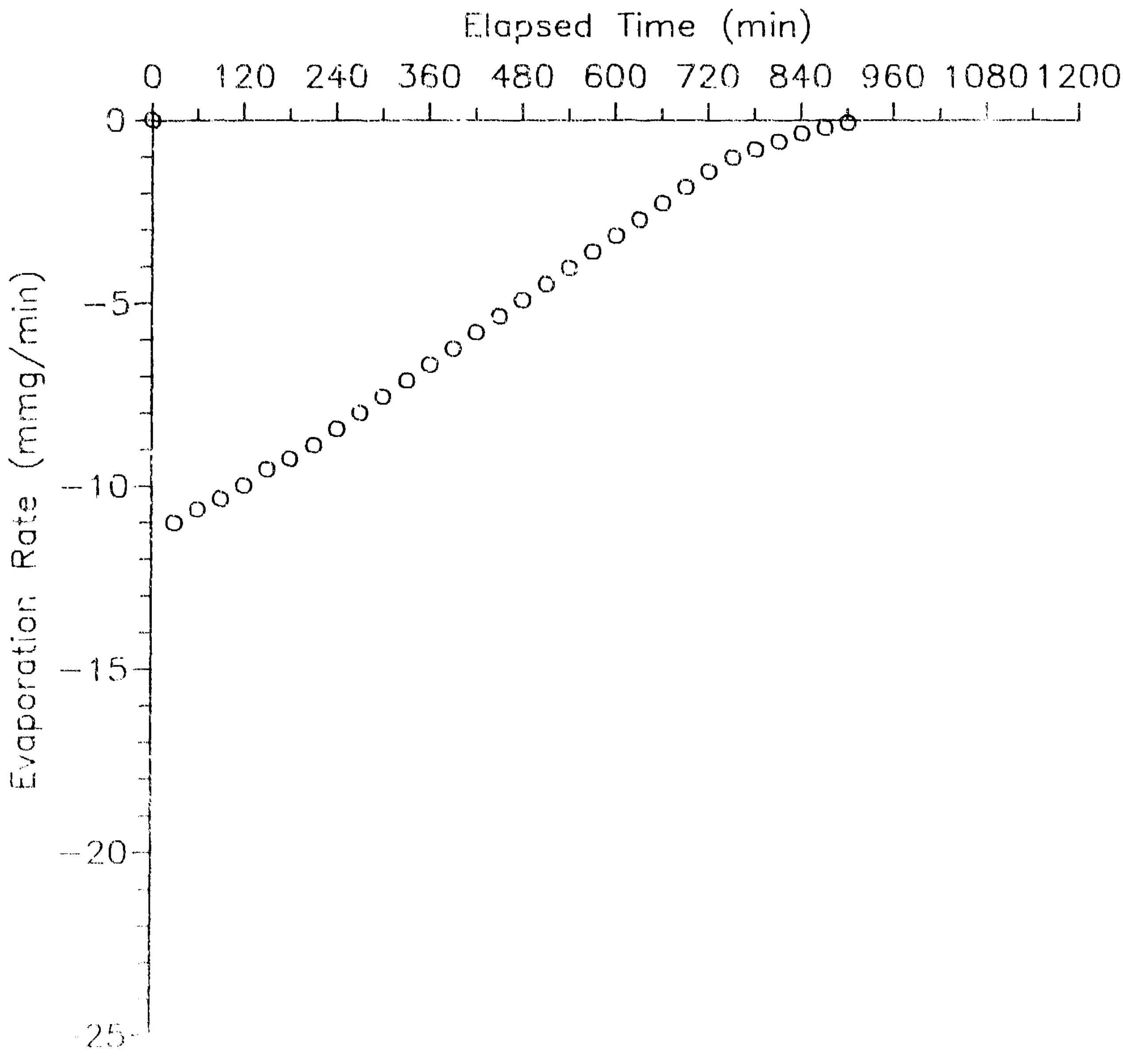


Figure H-6. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

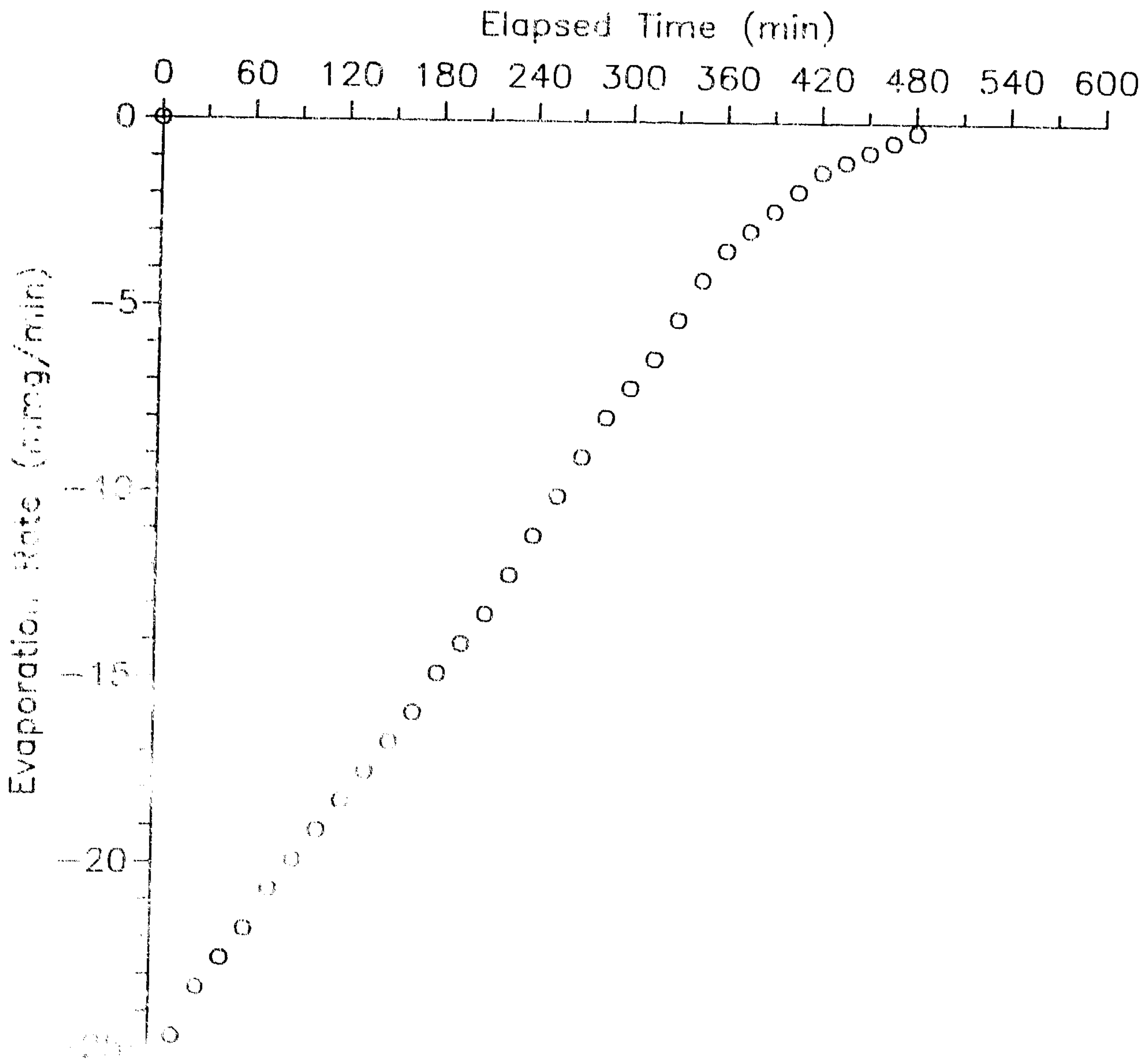


Figure H-7. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

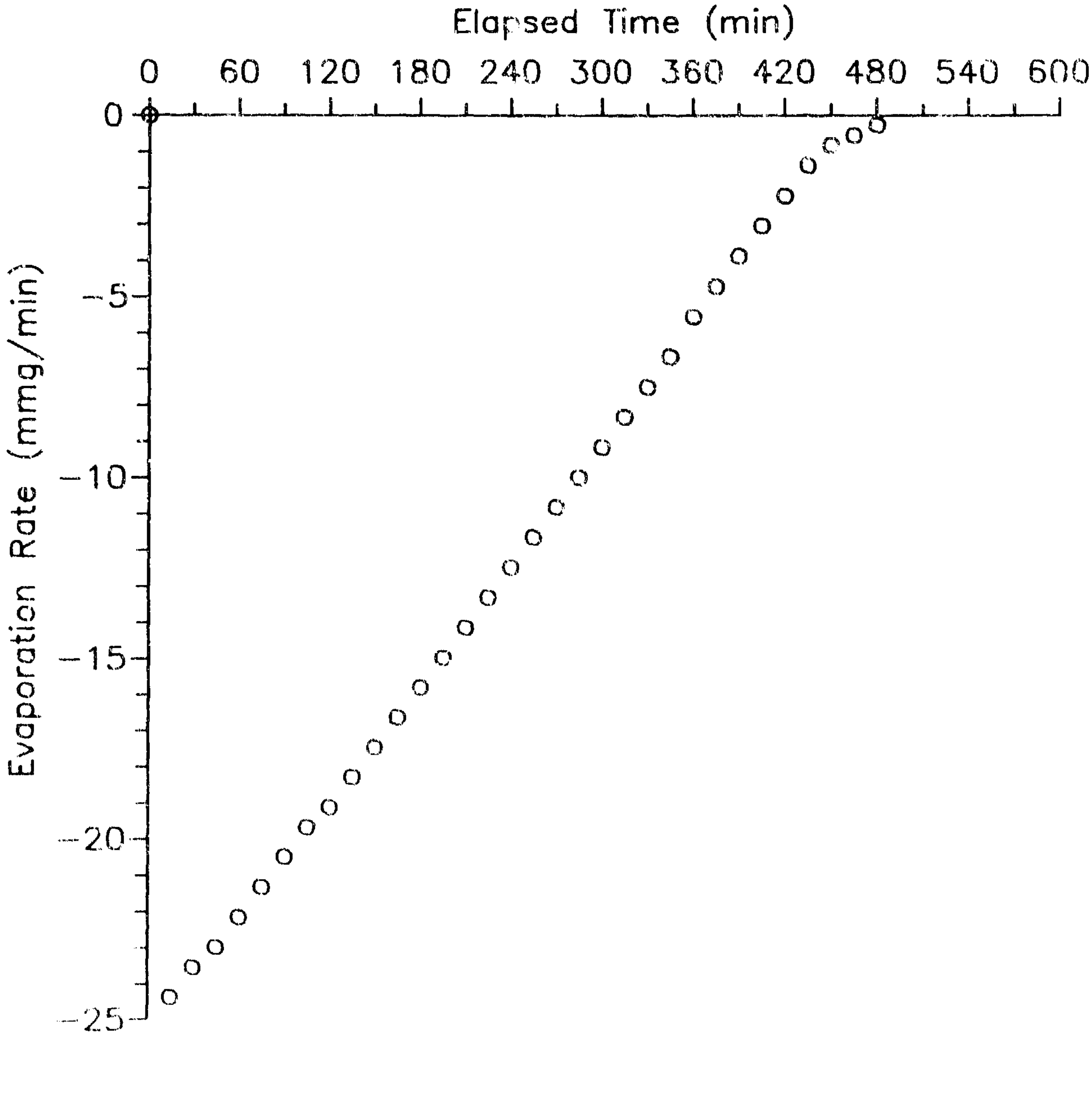


Figure H-8. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF9 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

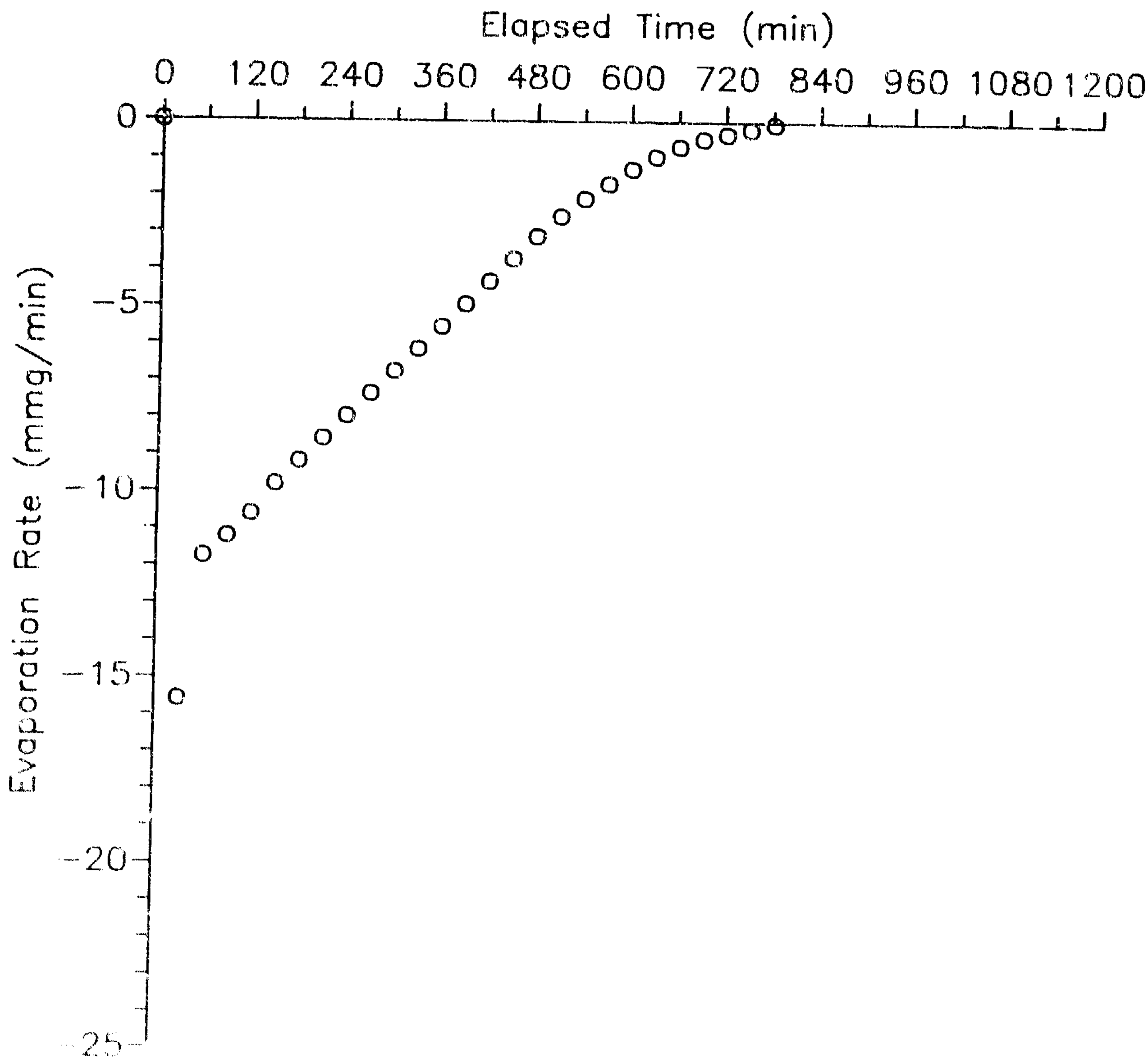


Figure H-9. Droplet Evaporation Rate Versus Time

EVAPORATION EXPERIMENT NO. GLF10 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 52%

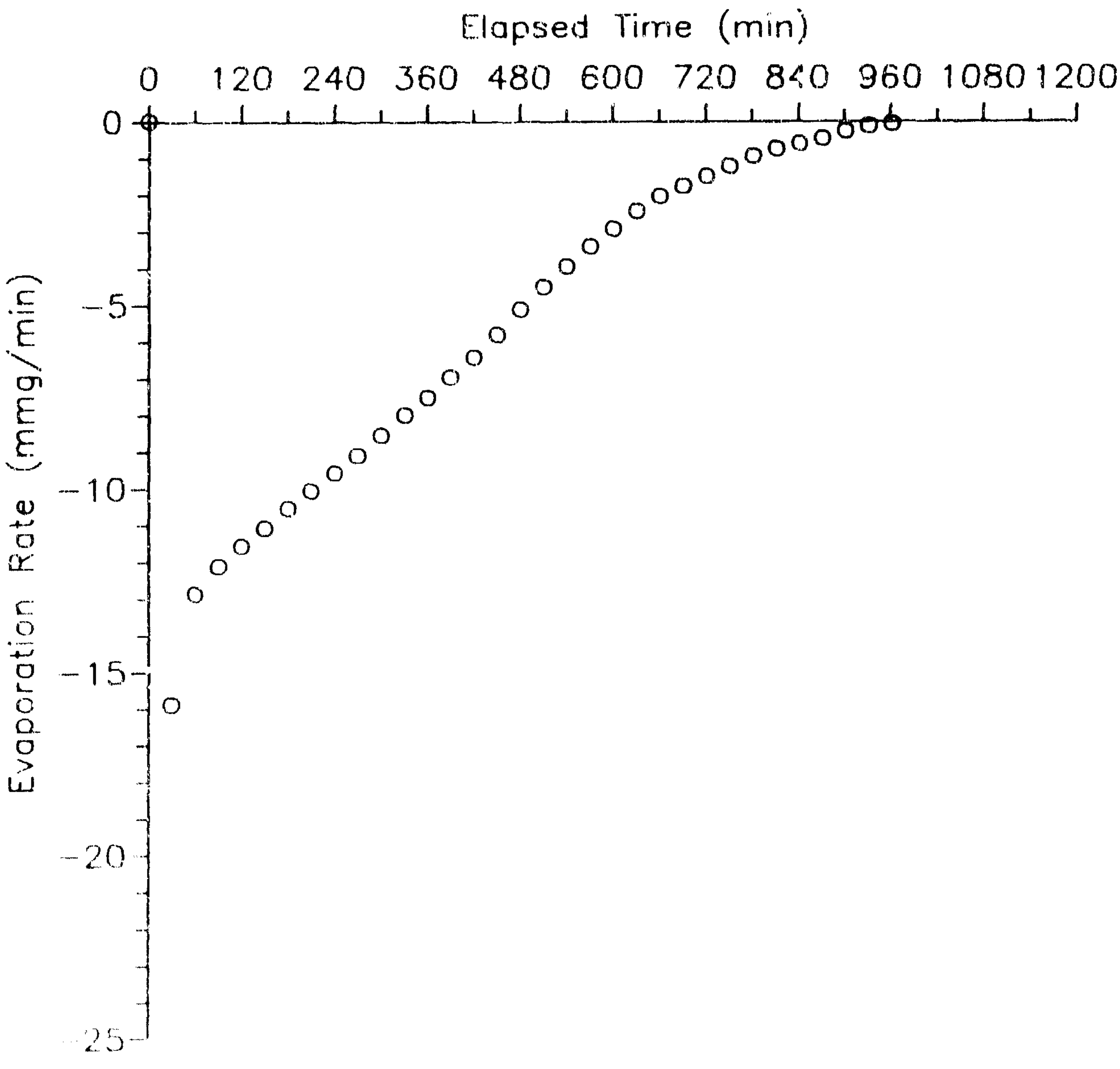


Figure H-10. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF11 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

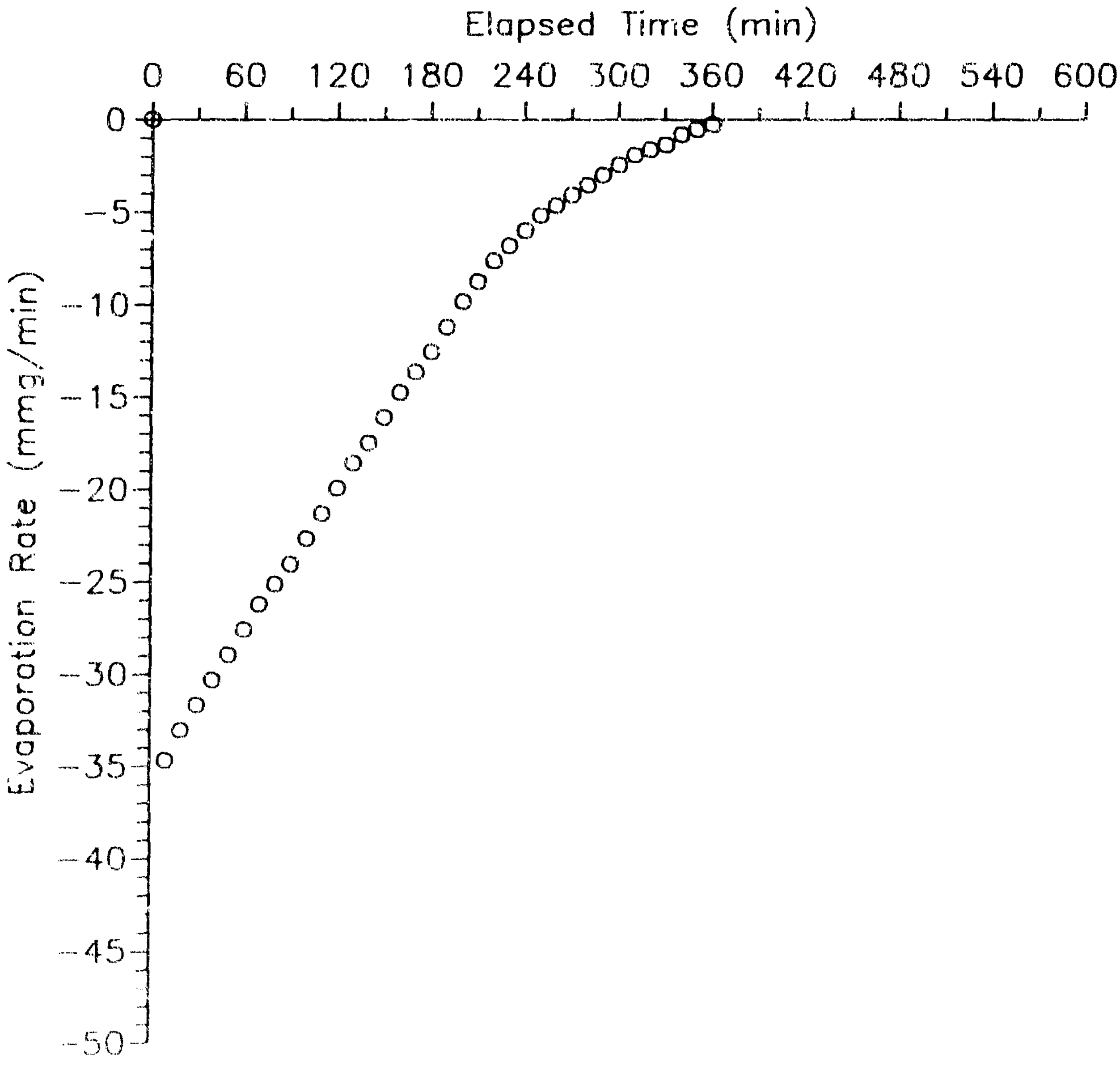


Figure H-11. Droplet Evaporation Rate Versus Time

EVAPORATION EXPERIMENT NO. GLF12 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

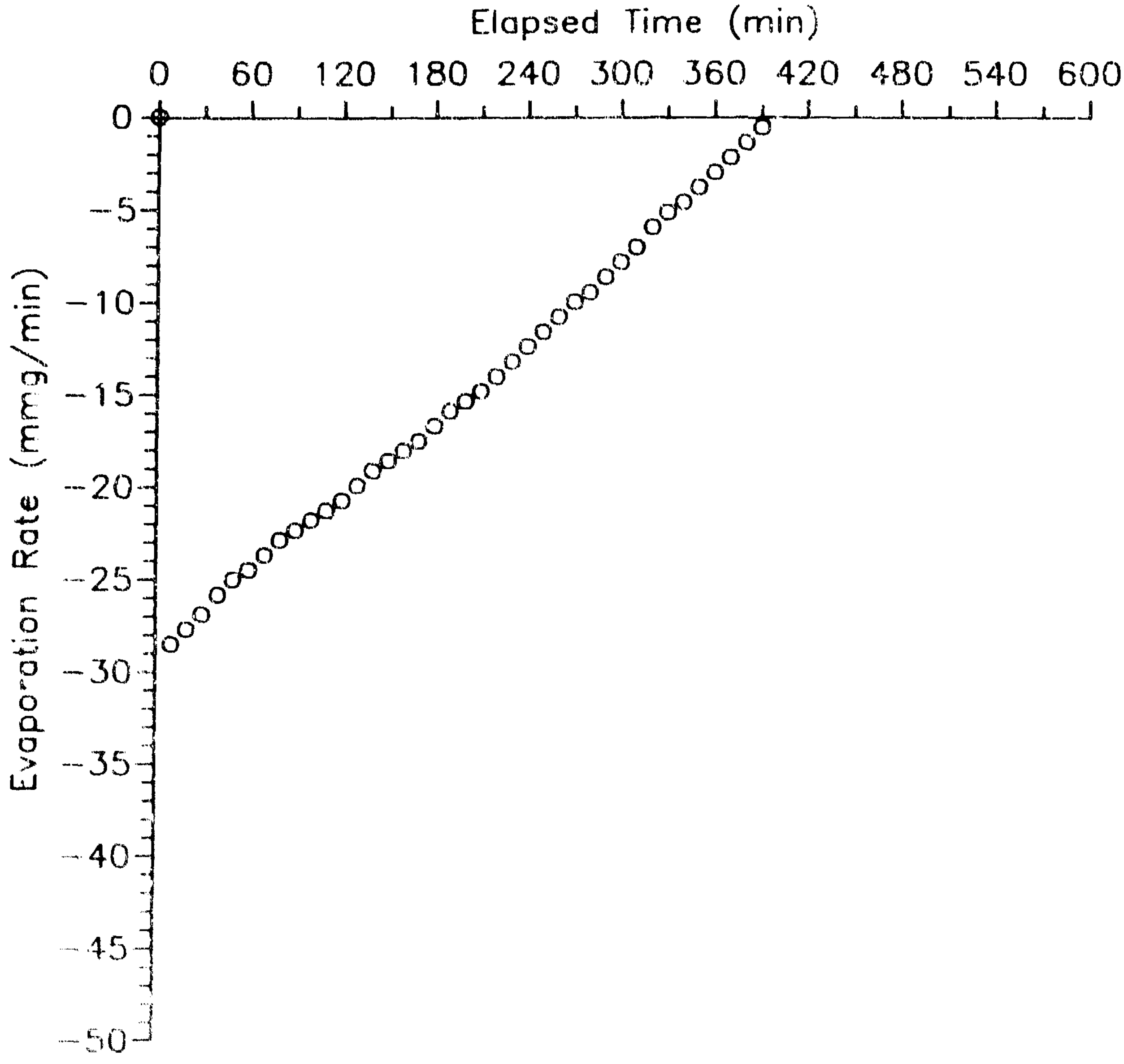


Figure H-12 Droplet Evaporation Rate Versus Time

EVAPORATION EXPERIMENT NO. GLF13 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

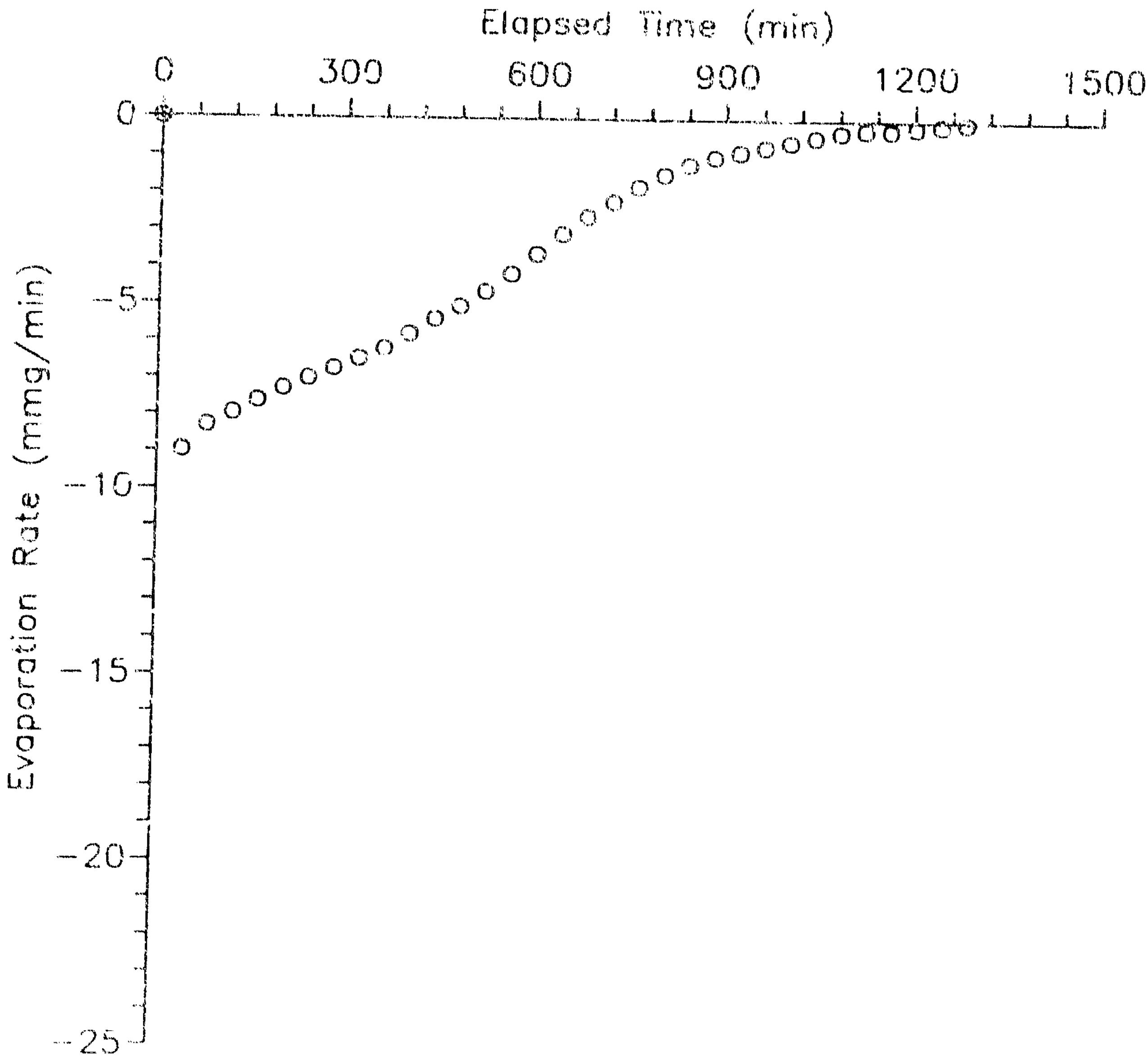


Figure H-13. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF14 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 43%

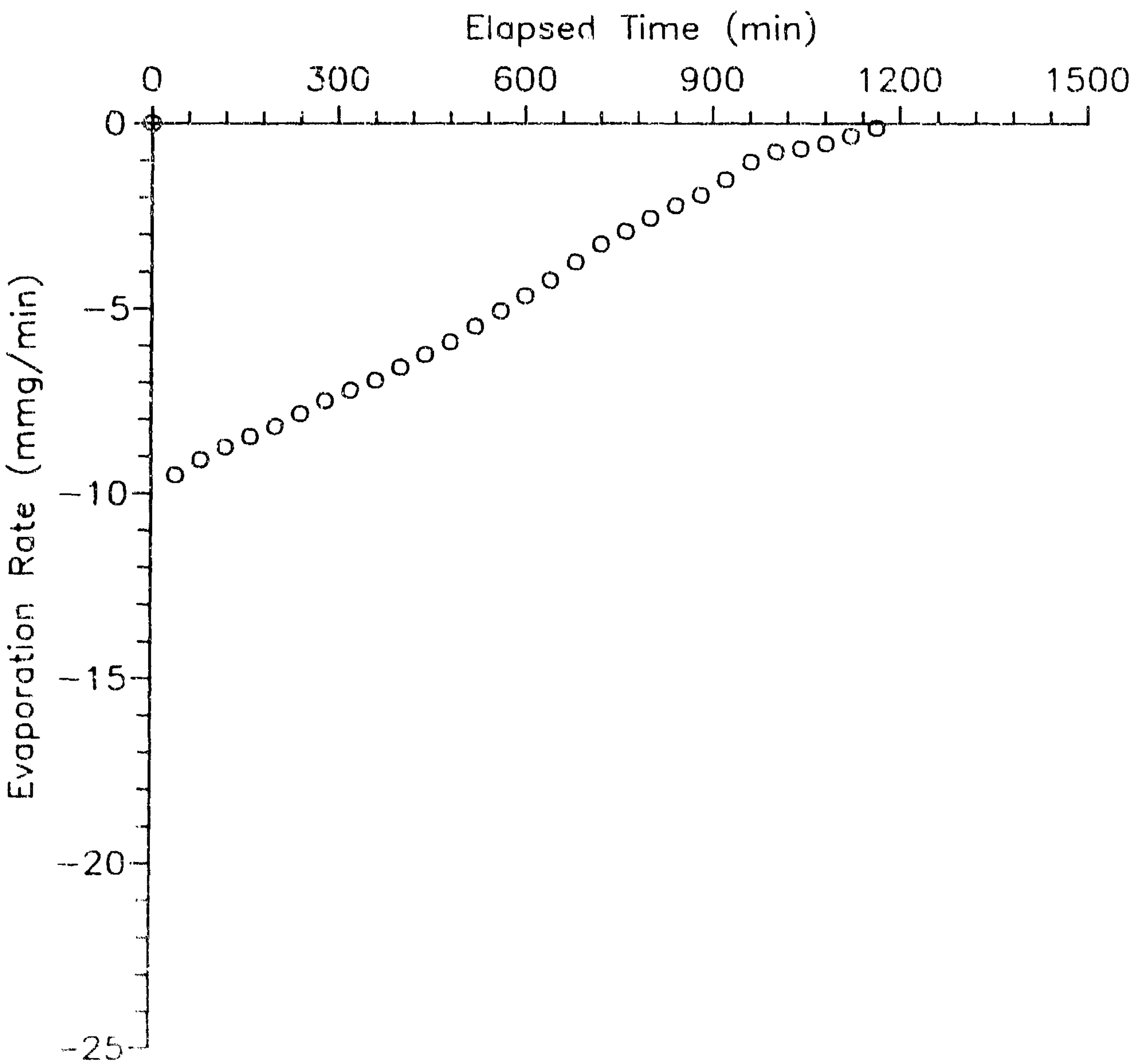


Figure H-14. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF15 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

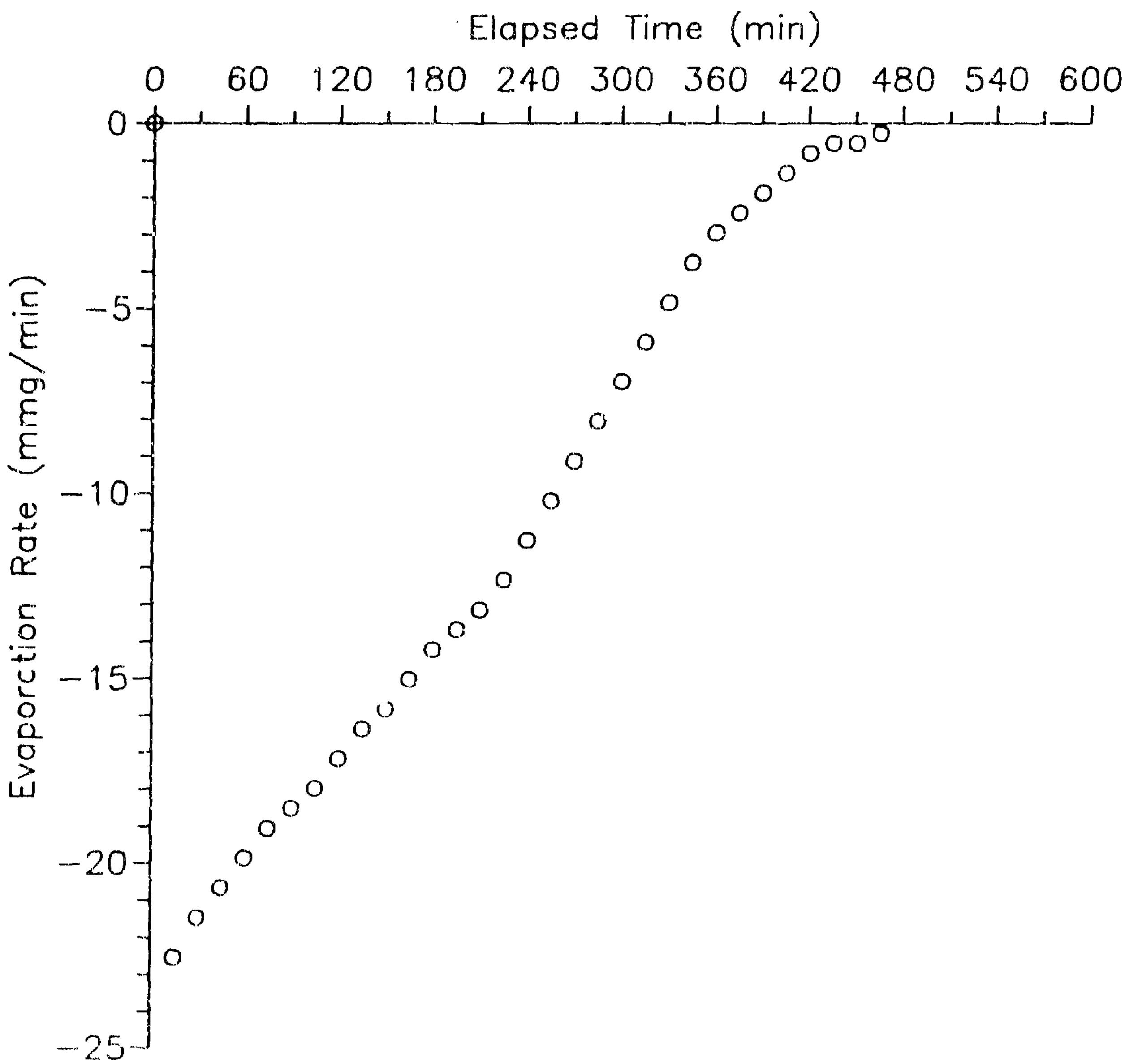


Figure H-15. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. GLF16 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

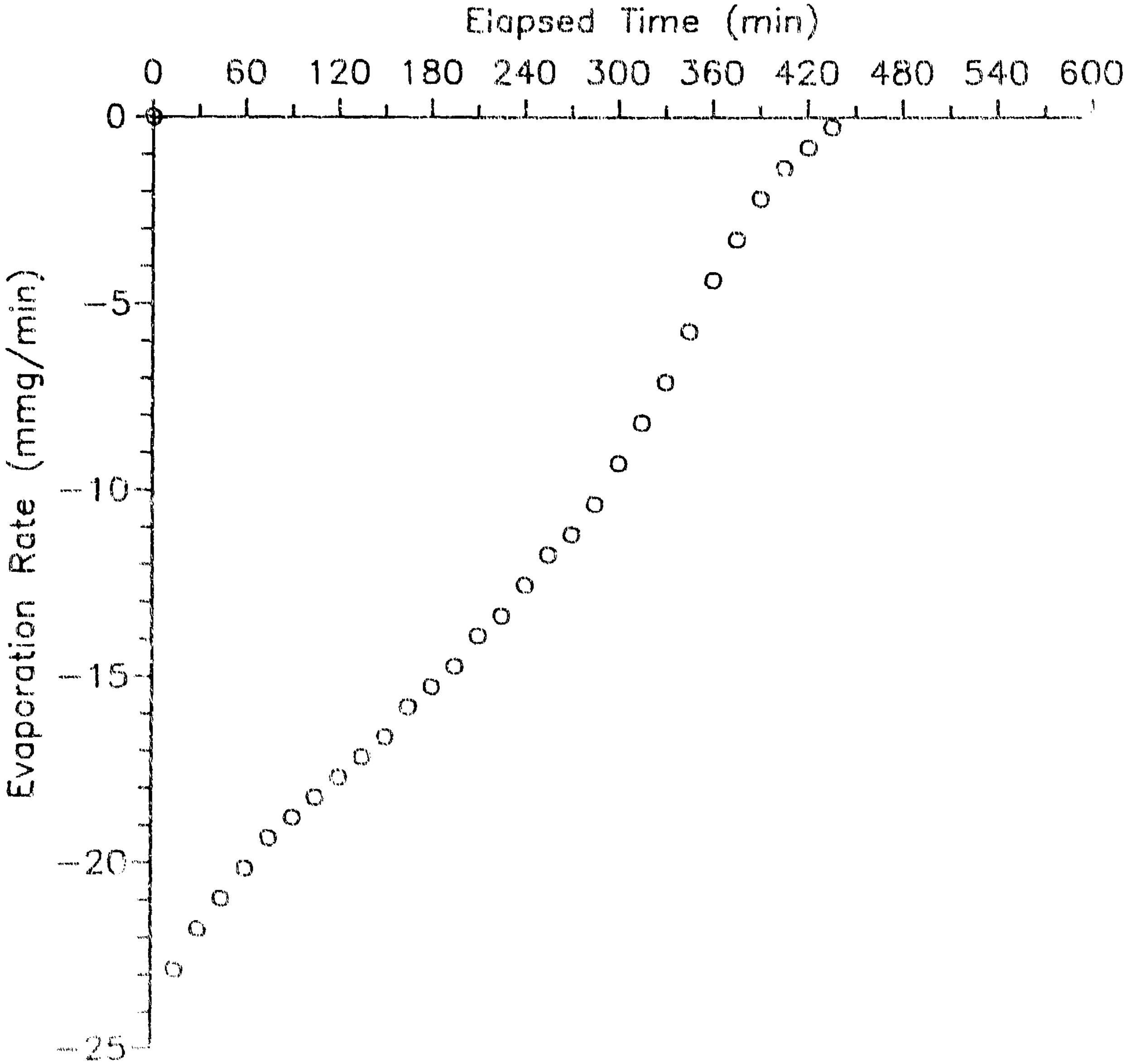


Figure H-16. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. BLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

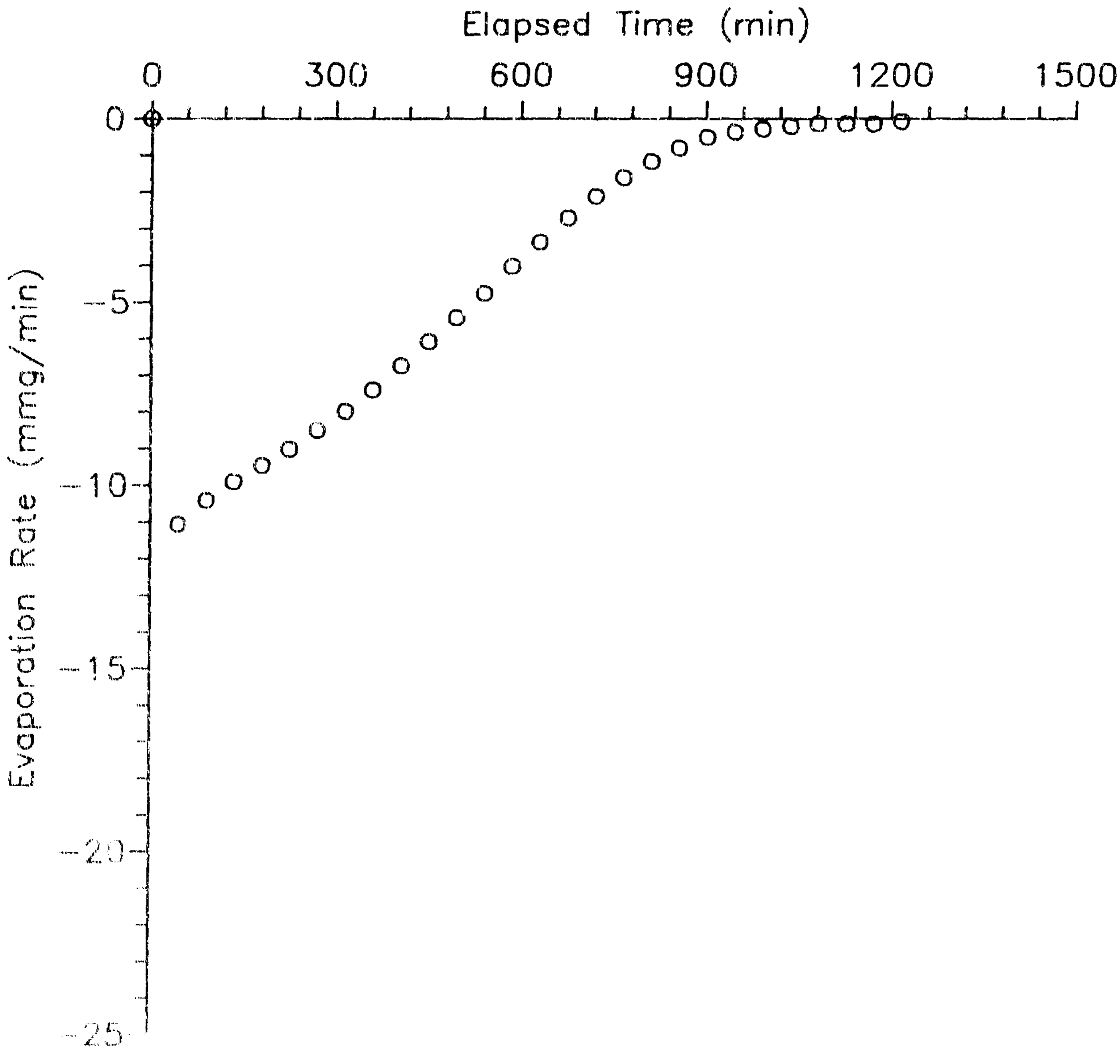


Figure H-17. Droplet Evaporation Rate Versus Time

EVAPORATION EXPERIMENT NO. BLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

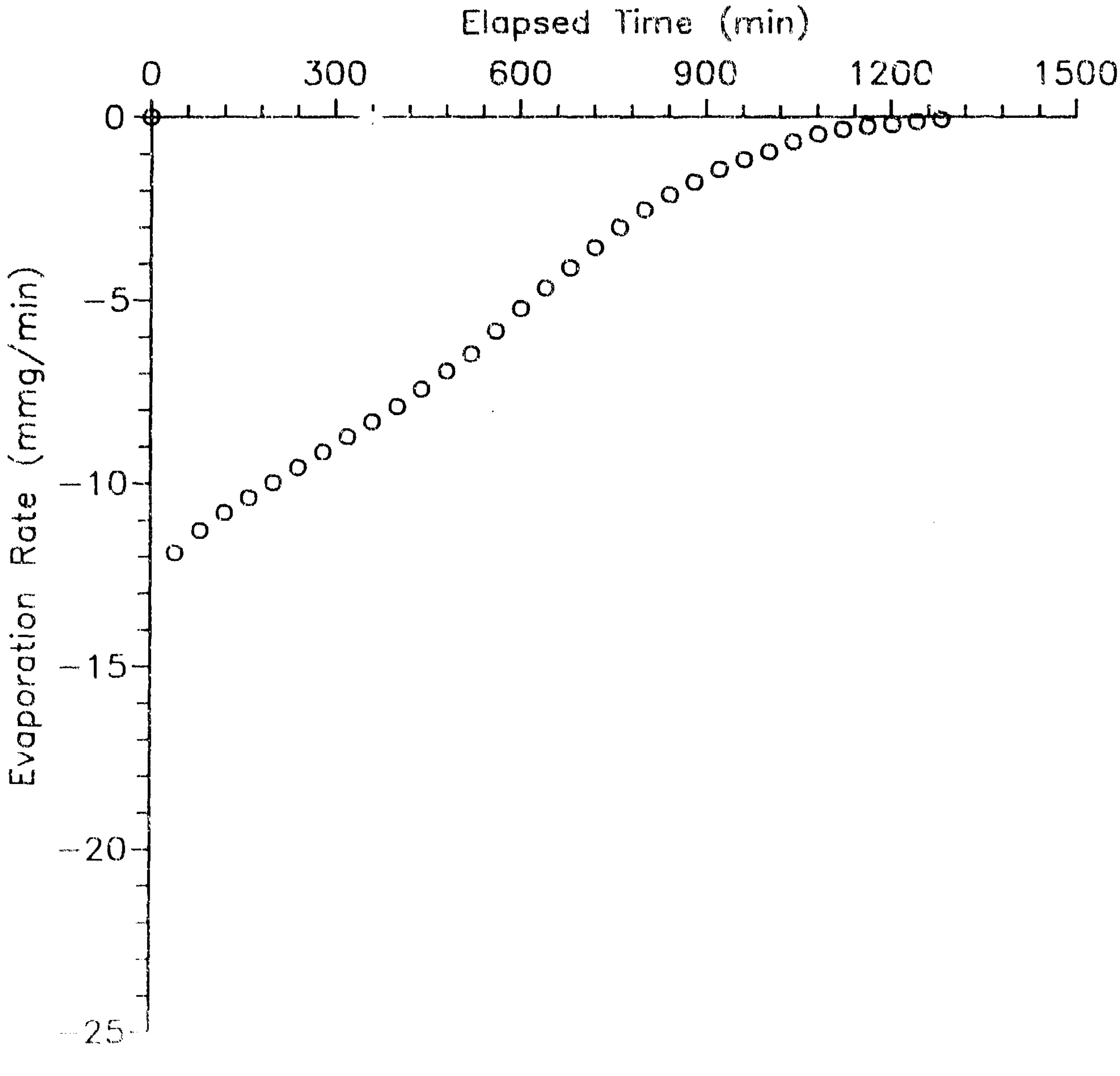
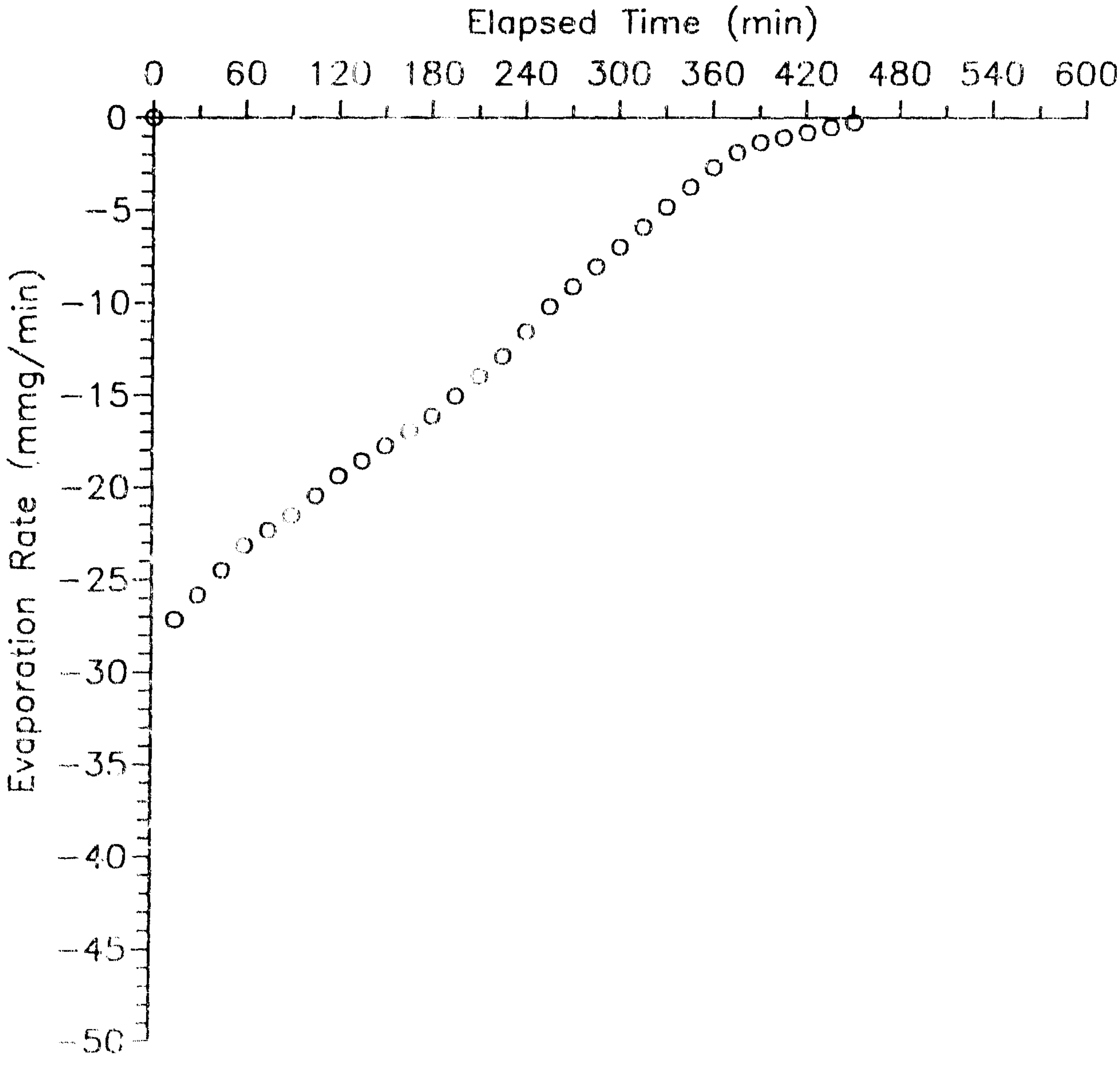


Figure H-18. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. BLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%



[illegible]ure 19. [illegible] [illegible]oration [illegible]

EVAPORATION EXPERIMENT NO. BLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 20%

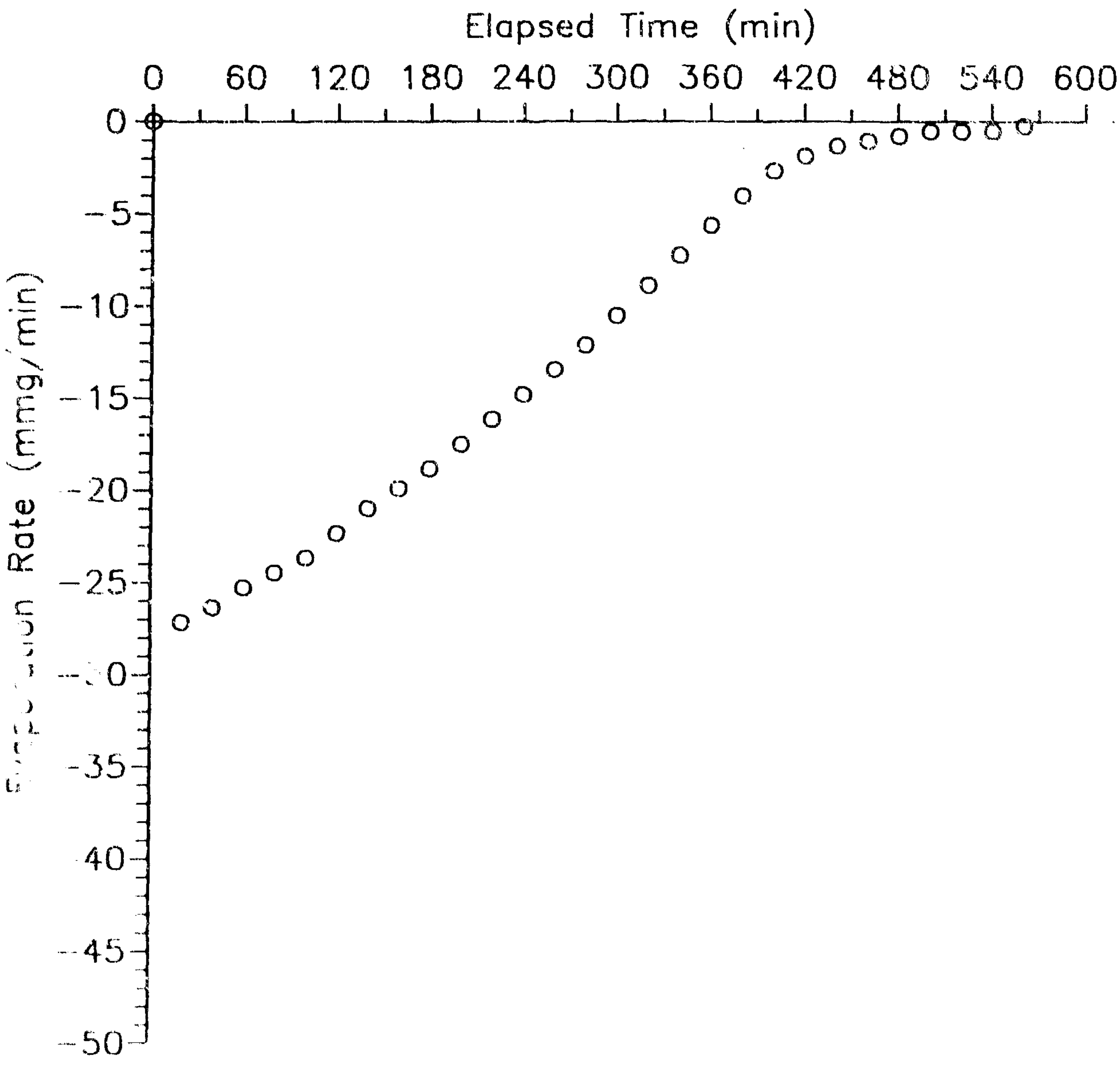


Figure H-20. Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. BLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

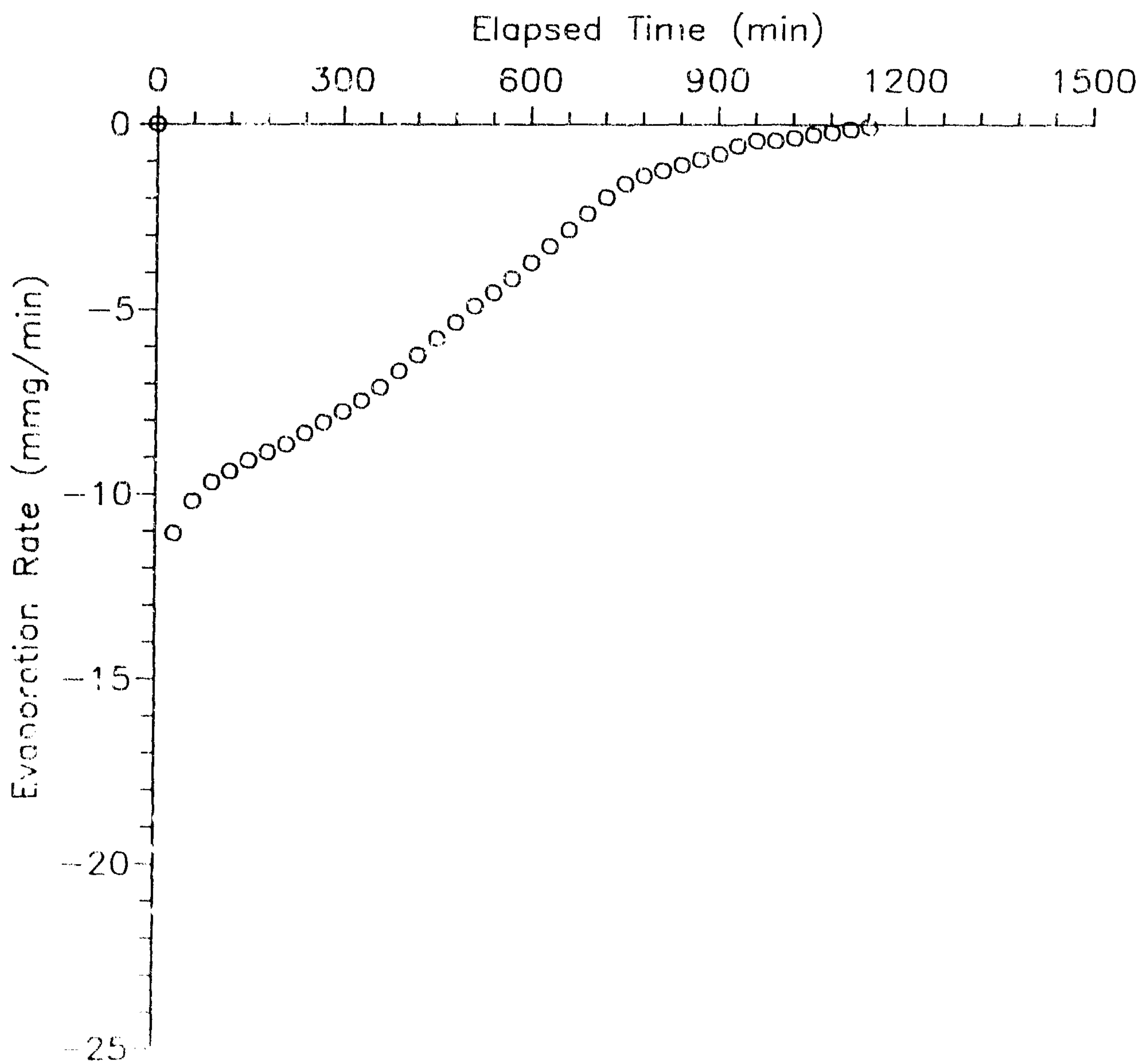


Figure H-21 Droplet Evaporation Rate Versus Time

EVAPORATION EXPERIMENT NO. BLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

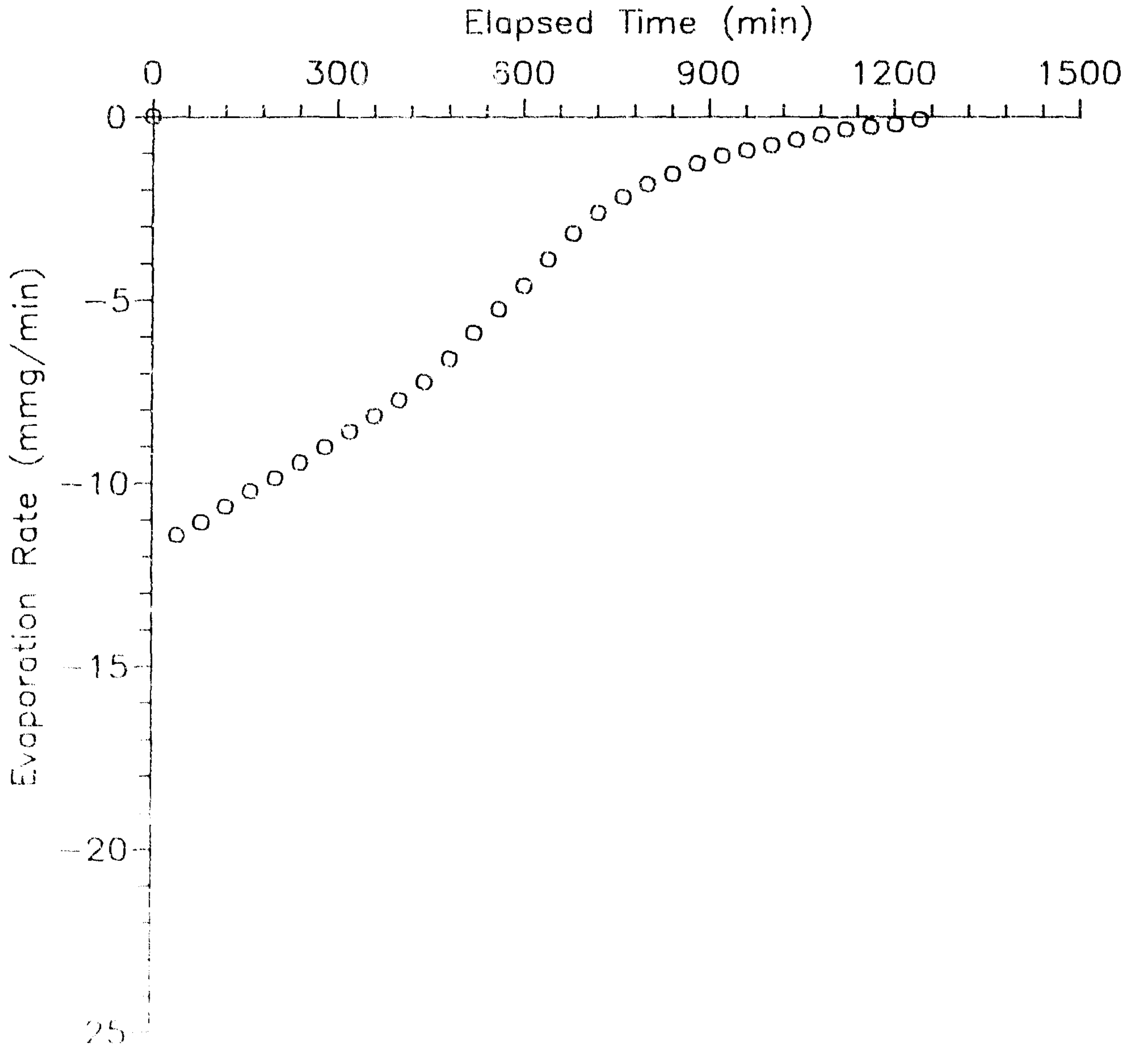


Figure H-22 Droplet Evaporation Rate Versus Time.

EVAPORATION EXPERIMENT NO. BLF7   SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA.,   100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH,   AIR TEMPERATURE 60 DEG F.,   RELATIVE HUMIDITY 38%

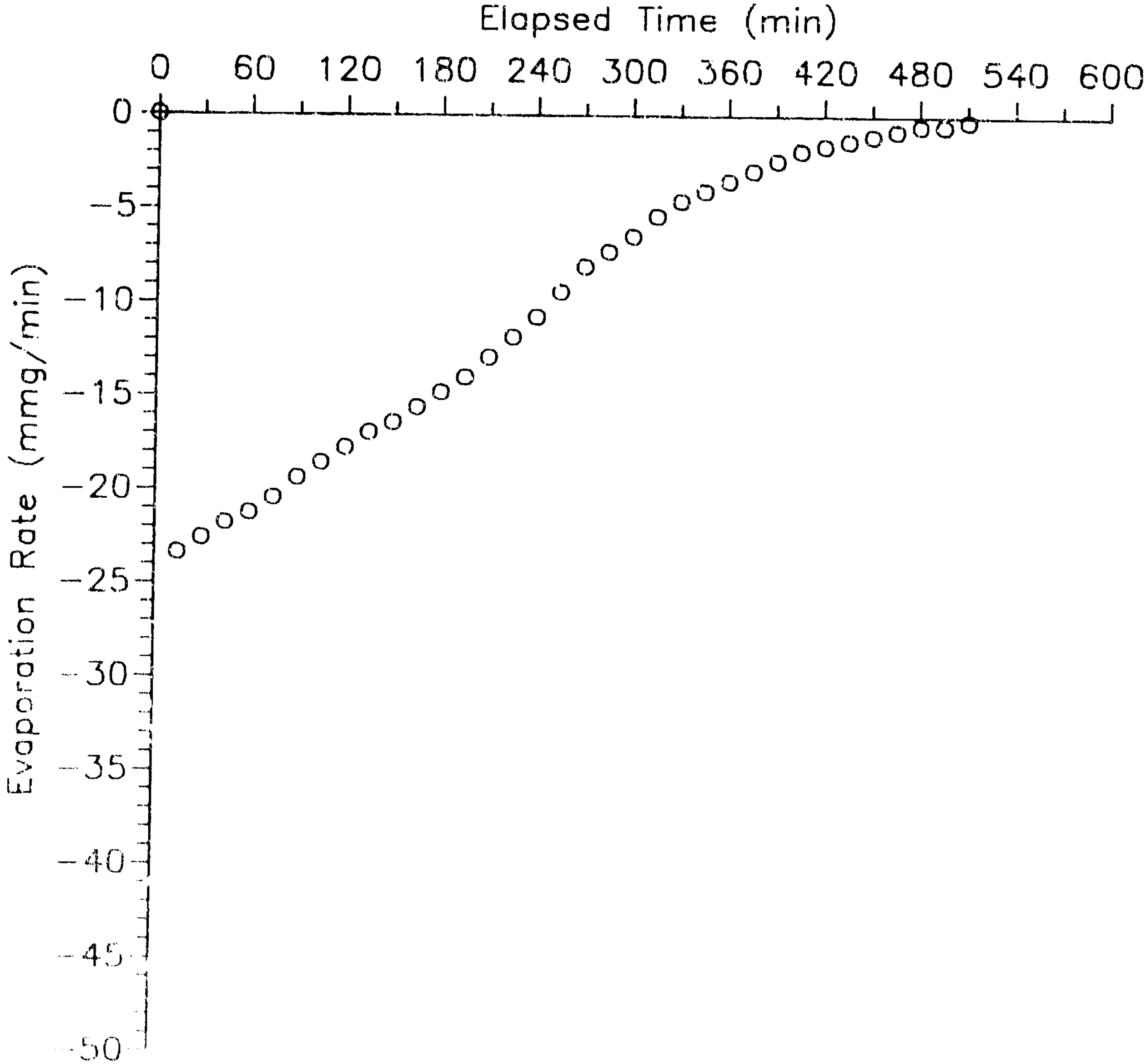


Figure H-23   Droplet Evaporation Rate Versus Time

EVAPORATION EXPERIMENT NO. BLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

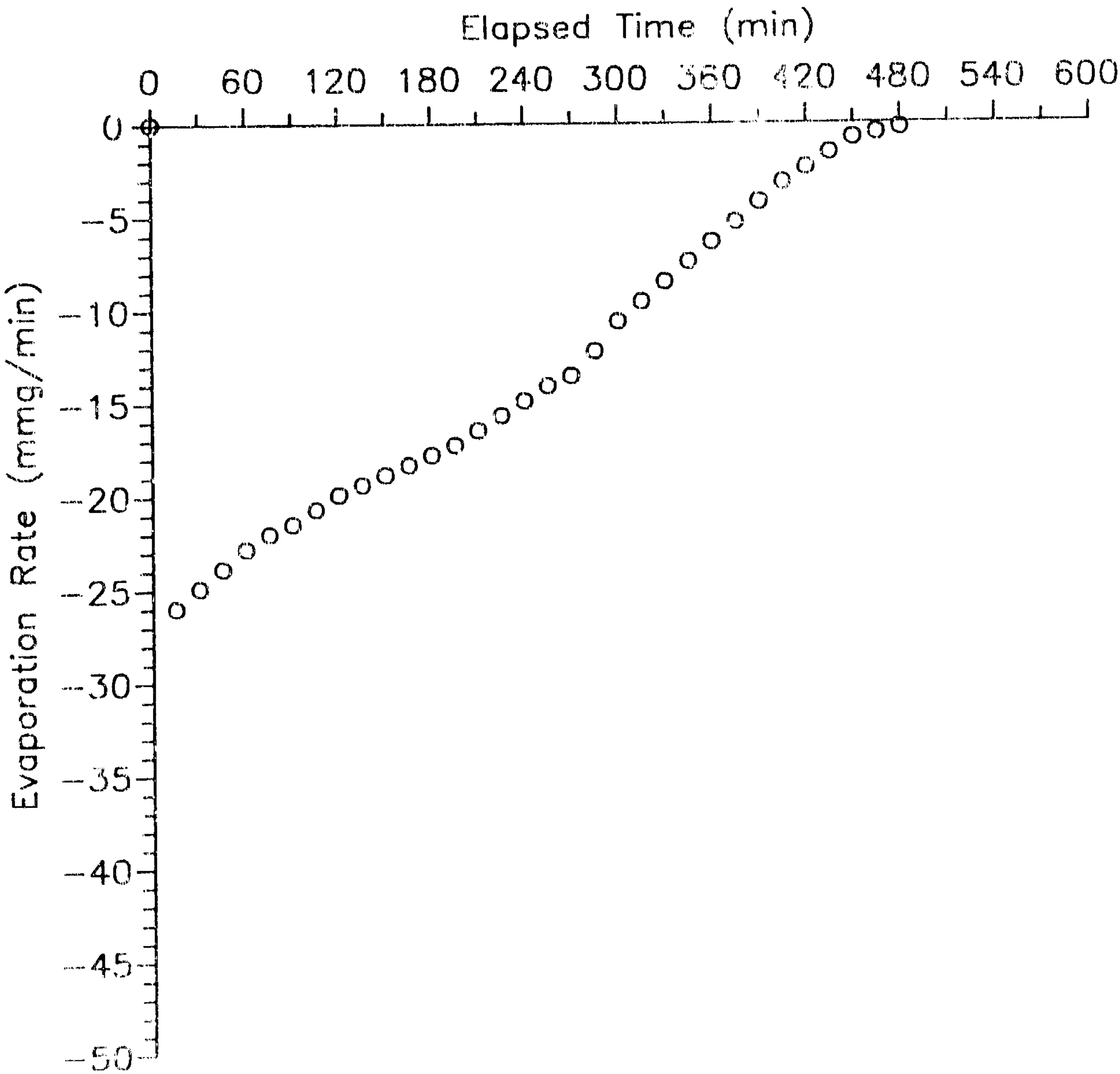


Figure H-24. Droplet Evaporation Rate Versus Time.

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APPENDIX I

PLOTS OF FRACTIONAL DROPLET MASS VERSUS DROPLET HALF-LIFE

EVAPORATION EXPERIMENT NO. GLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 45%

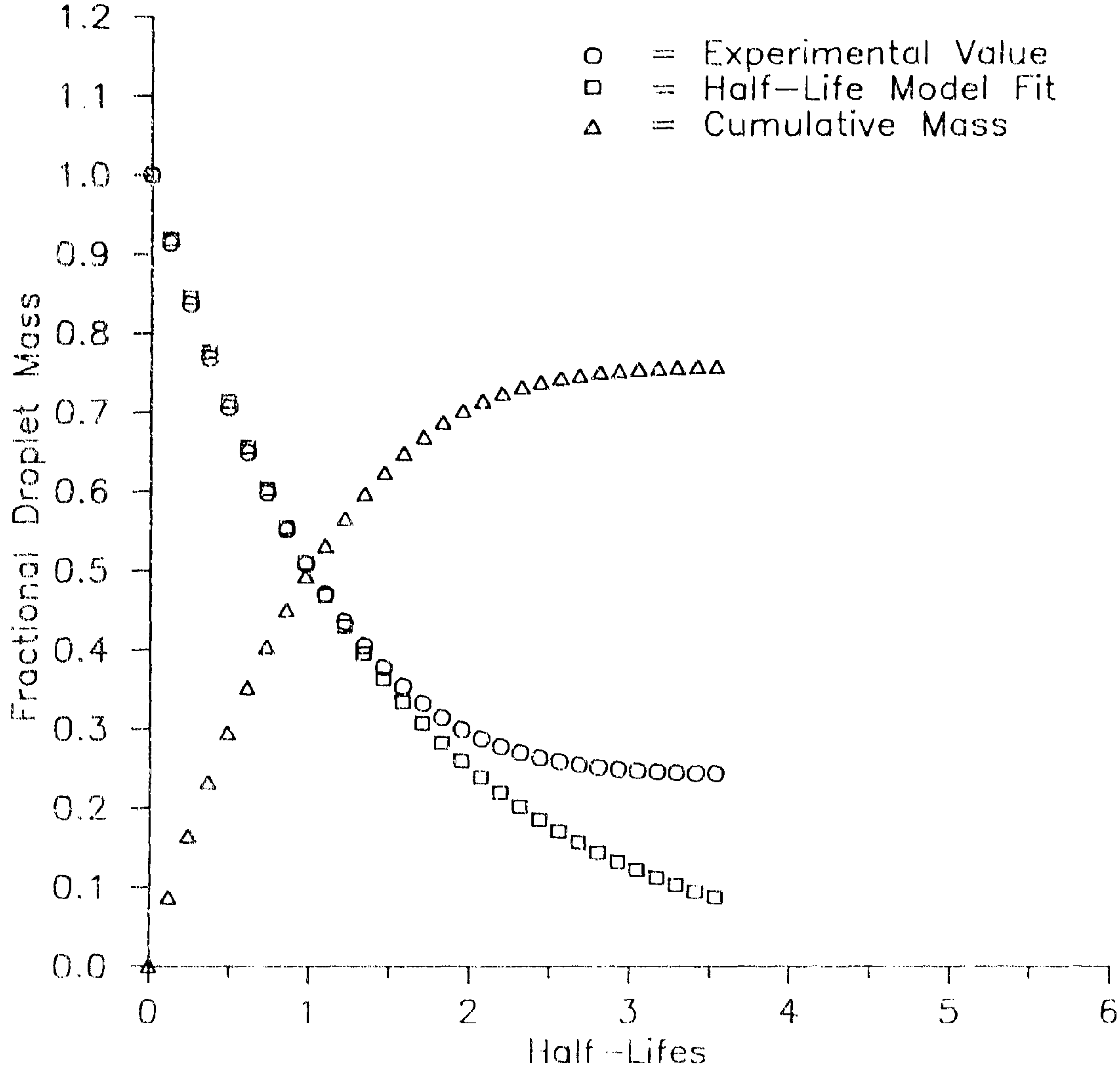

Figure I-1. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

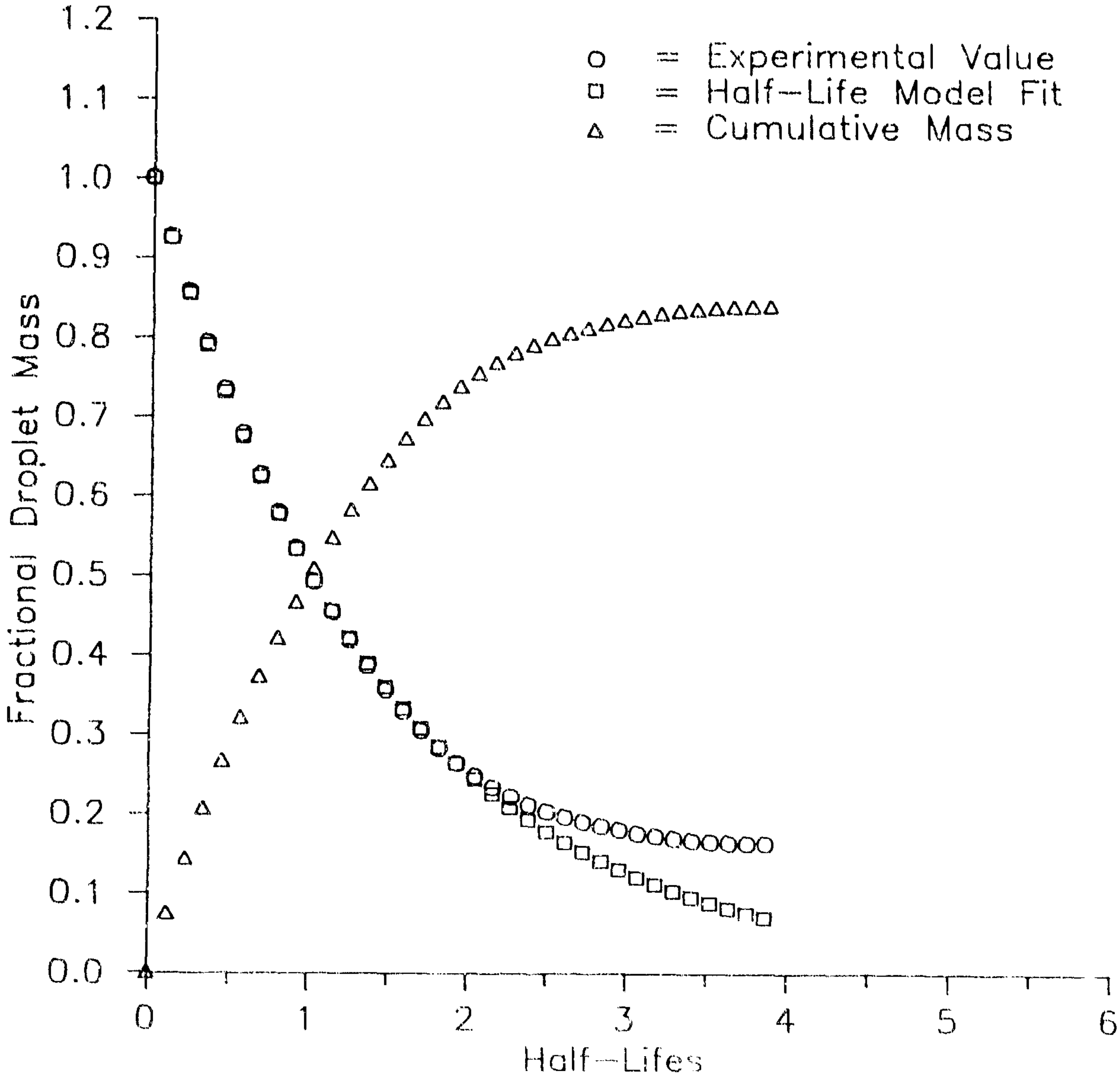

Figure I-2. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF3 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

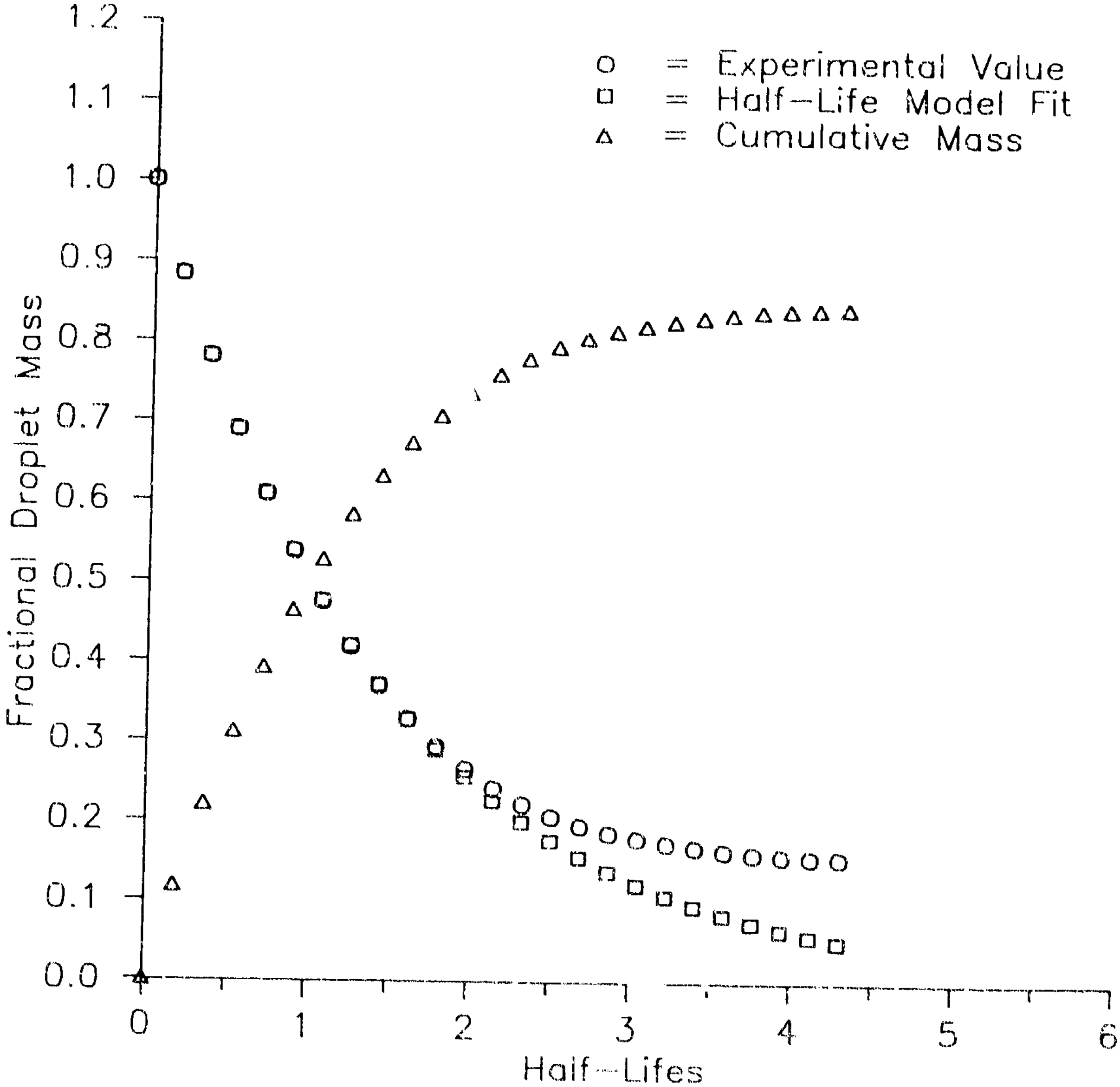

Figure I-3. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/TOP SURFACE
WINDSPEED 11 MPH AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

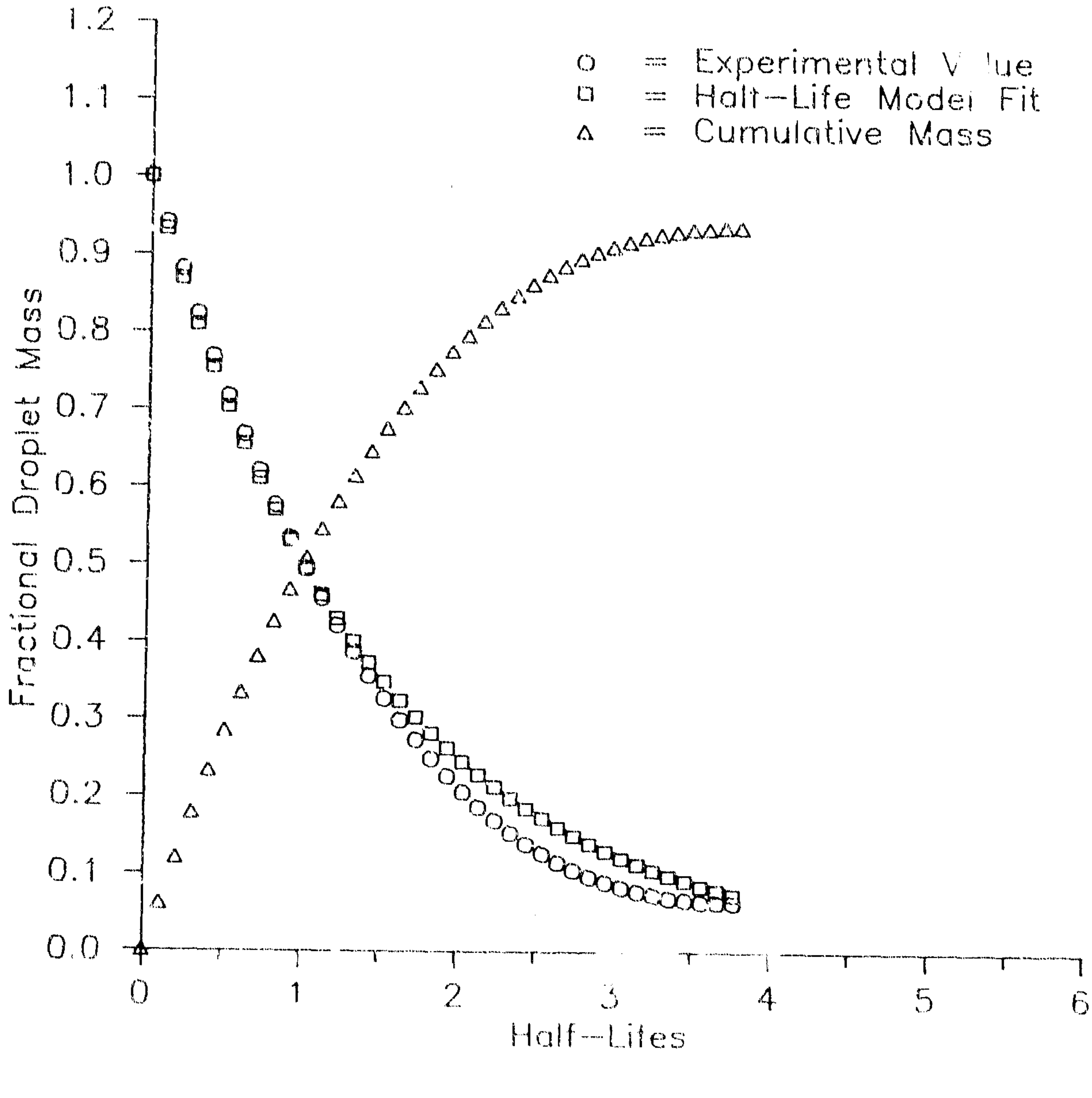

Figure I-4. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 58%

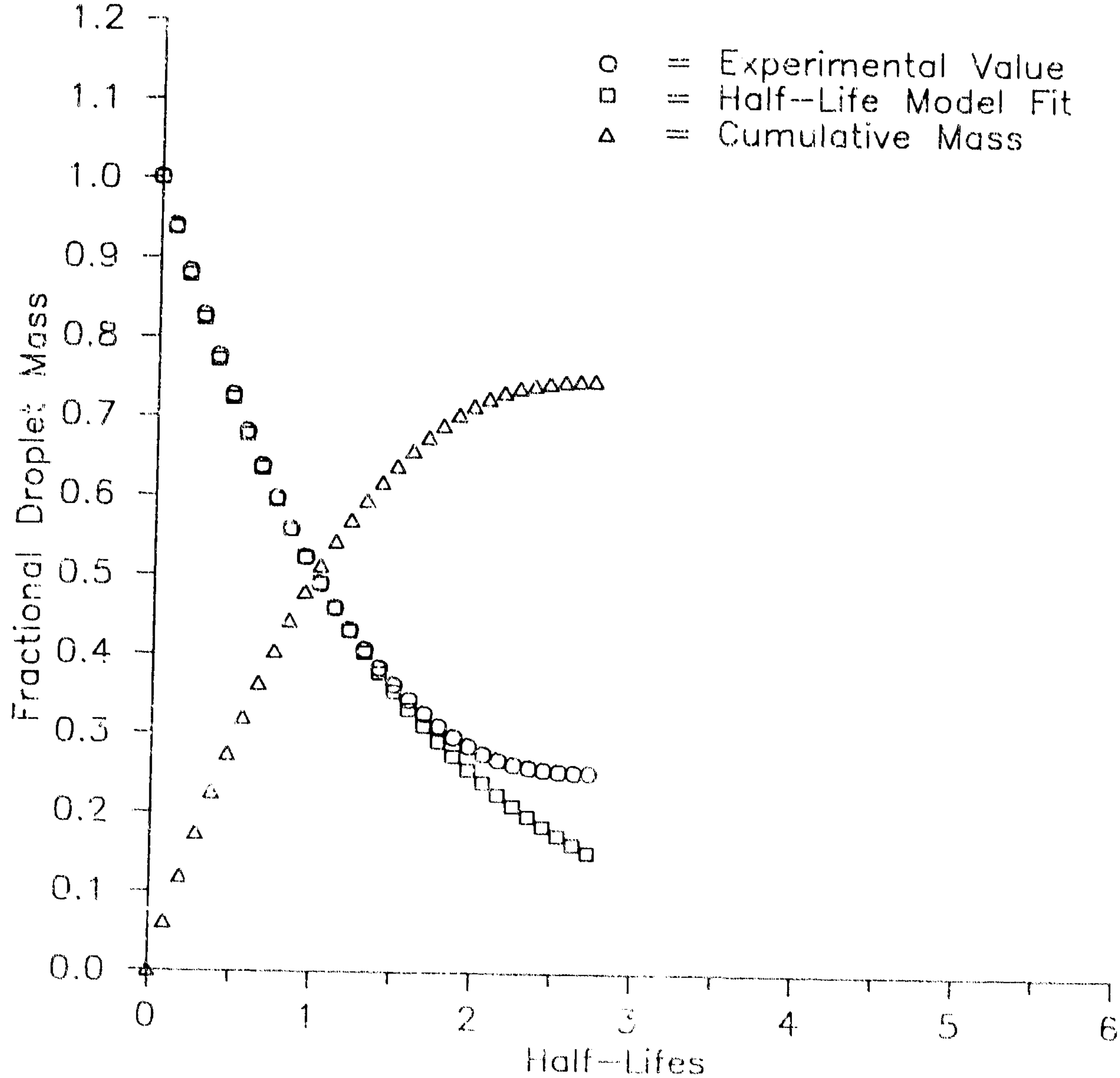

Figure I-5. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

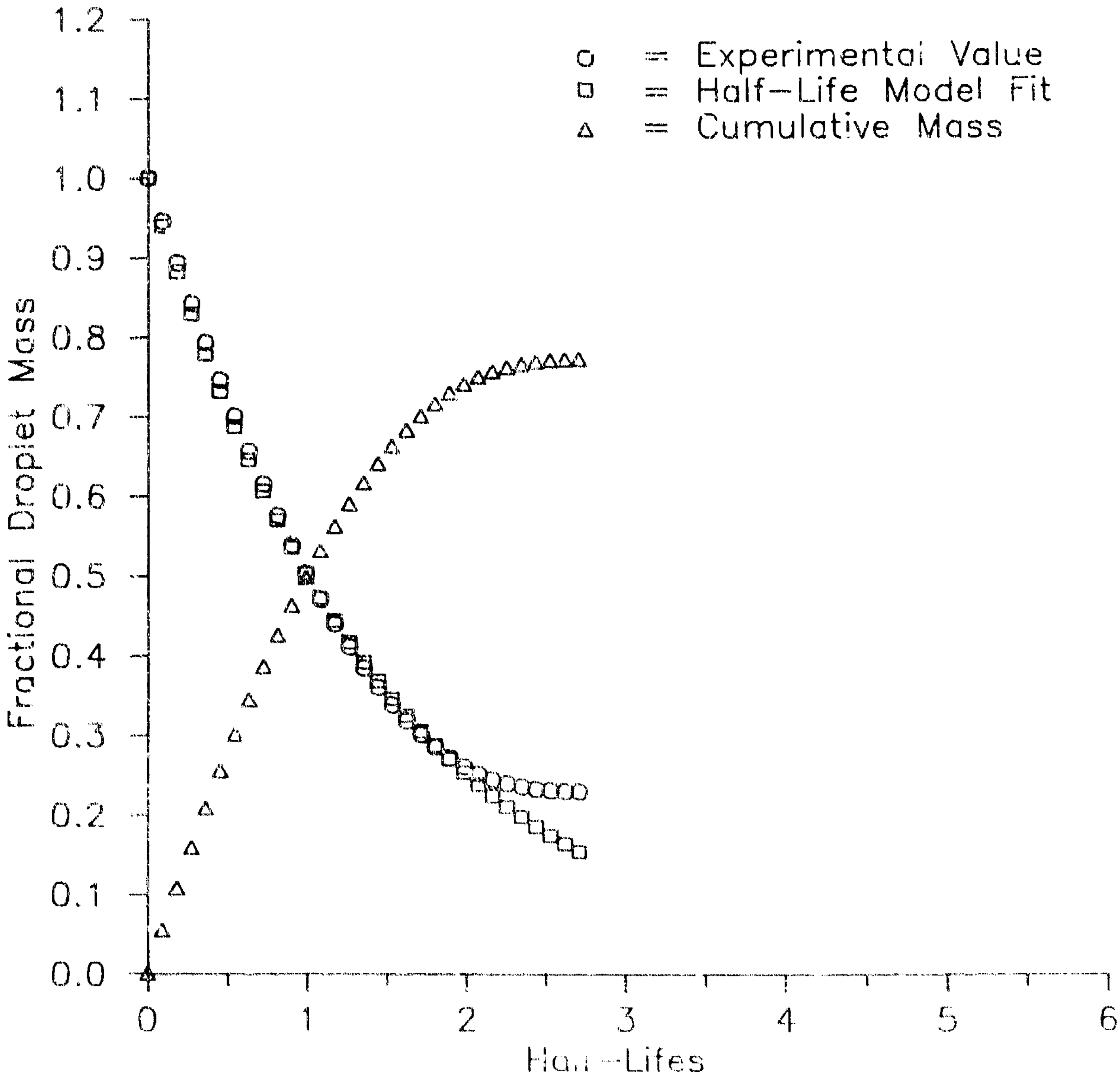

Figure I-6. Fractional Droplet Mass Versus Droplet Half-Life

EVAPORATION EXPERIMENT NO. GLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

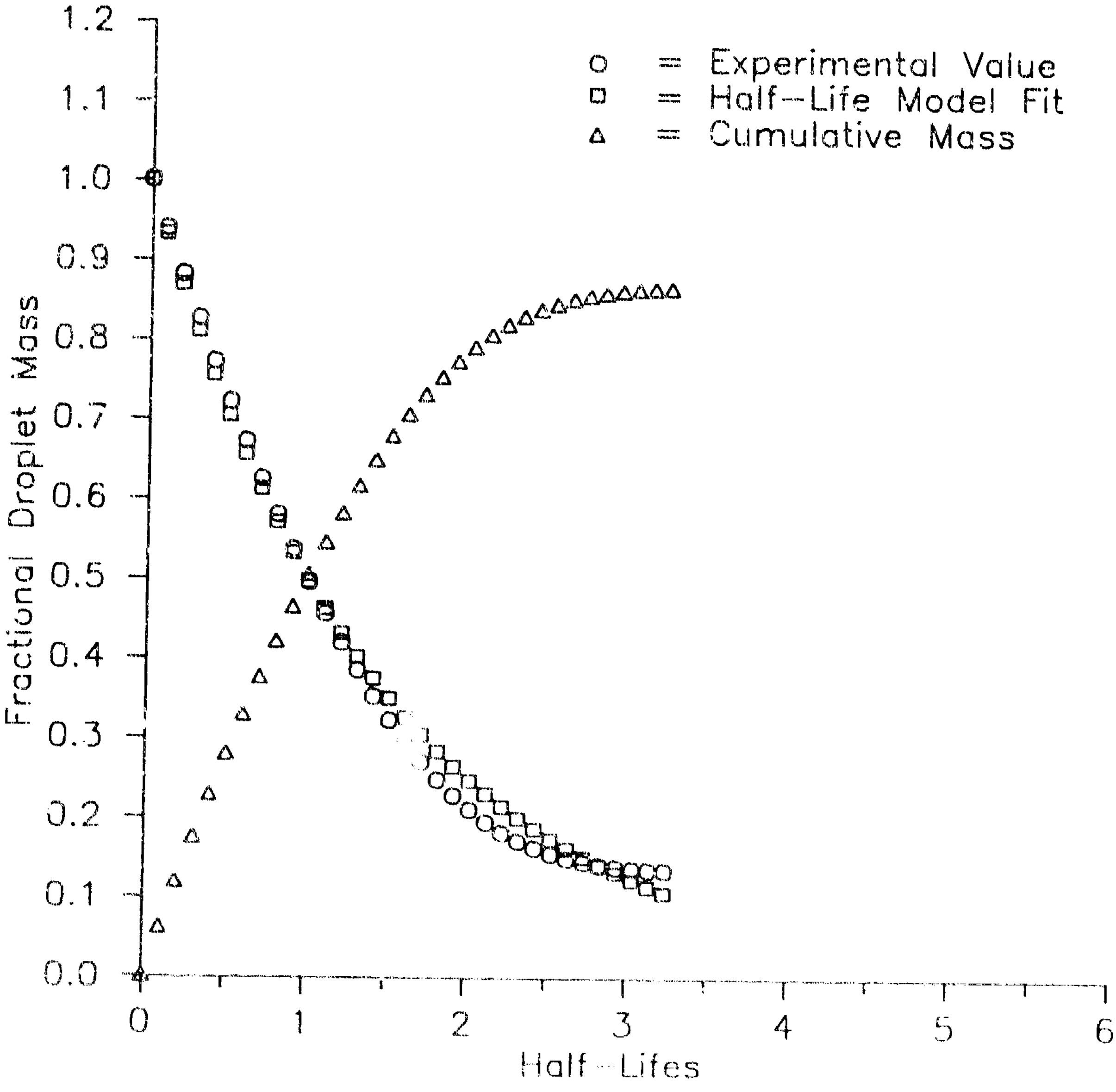

Figure I-7. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON HICKORY LEAF/BOTTOM
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

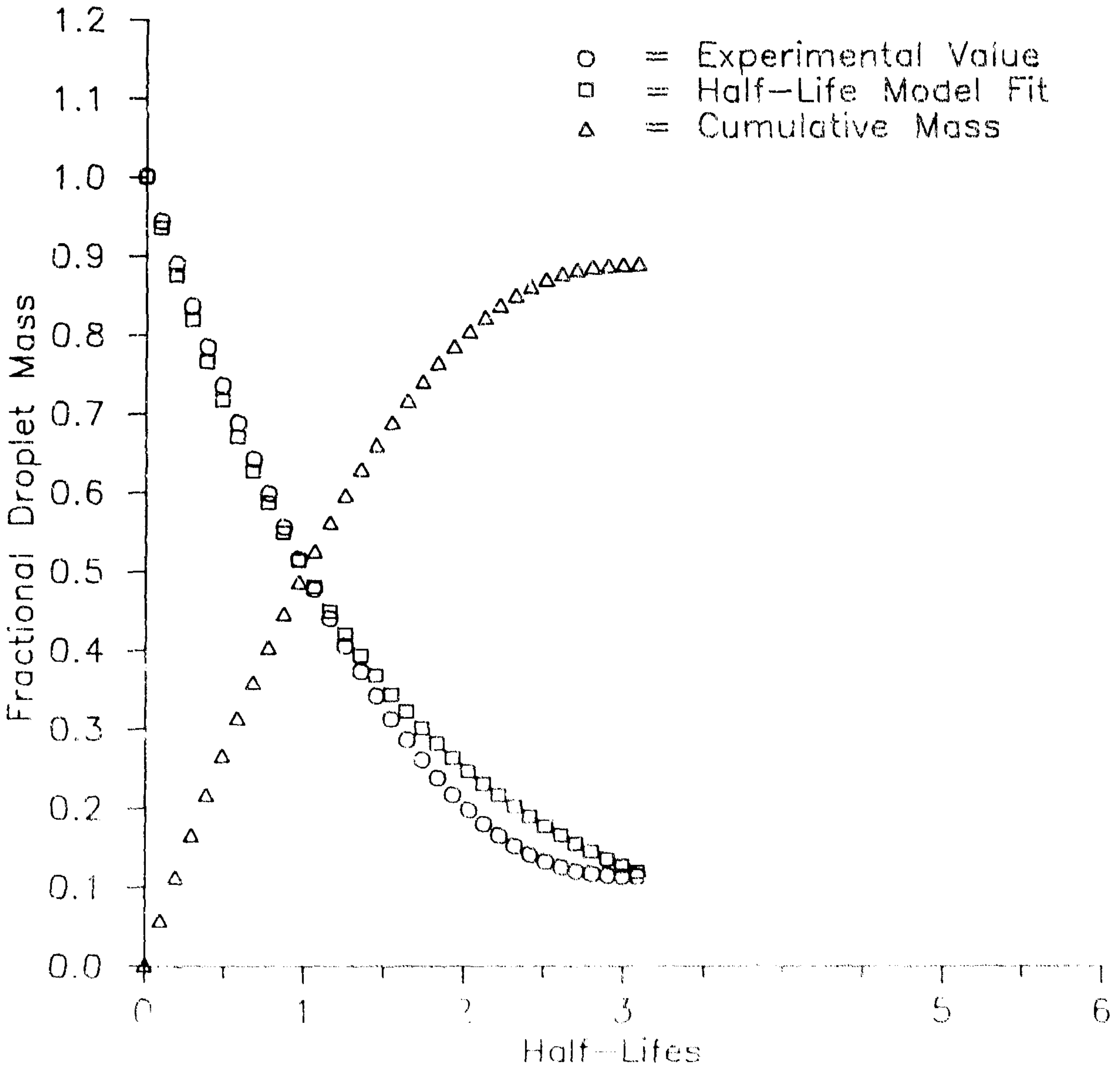

Figure I-8. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF9 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 44%

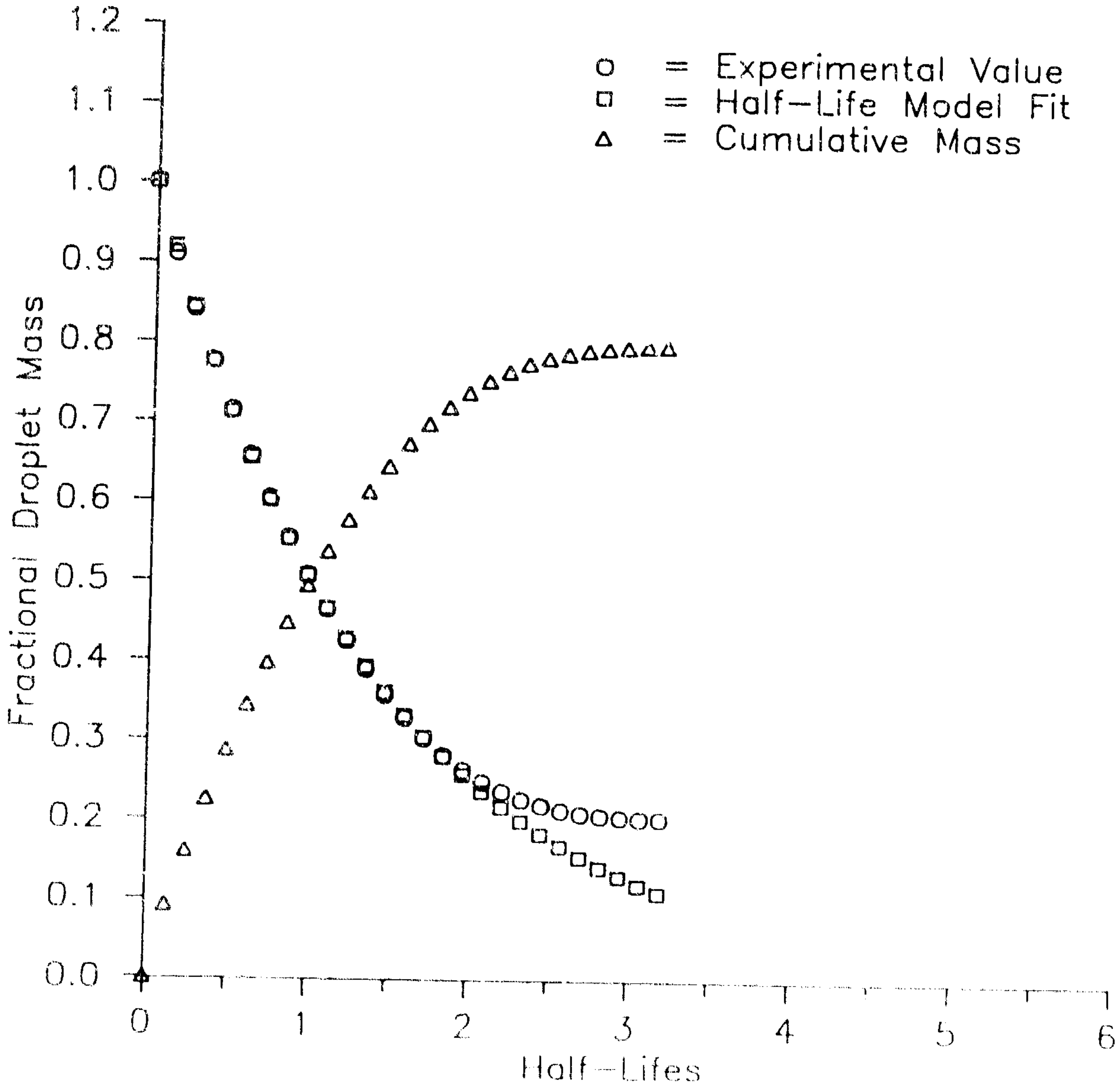

Figure I-9. Fractional Droplet Mass Versus Droplet Half Life.

EVAPORATION EXPERIMENT NO. GLF10 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 52%

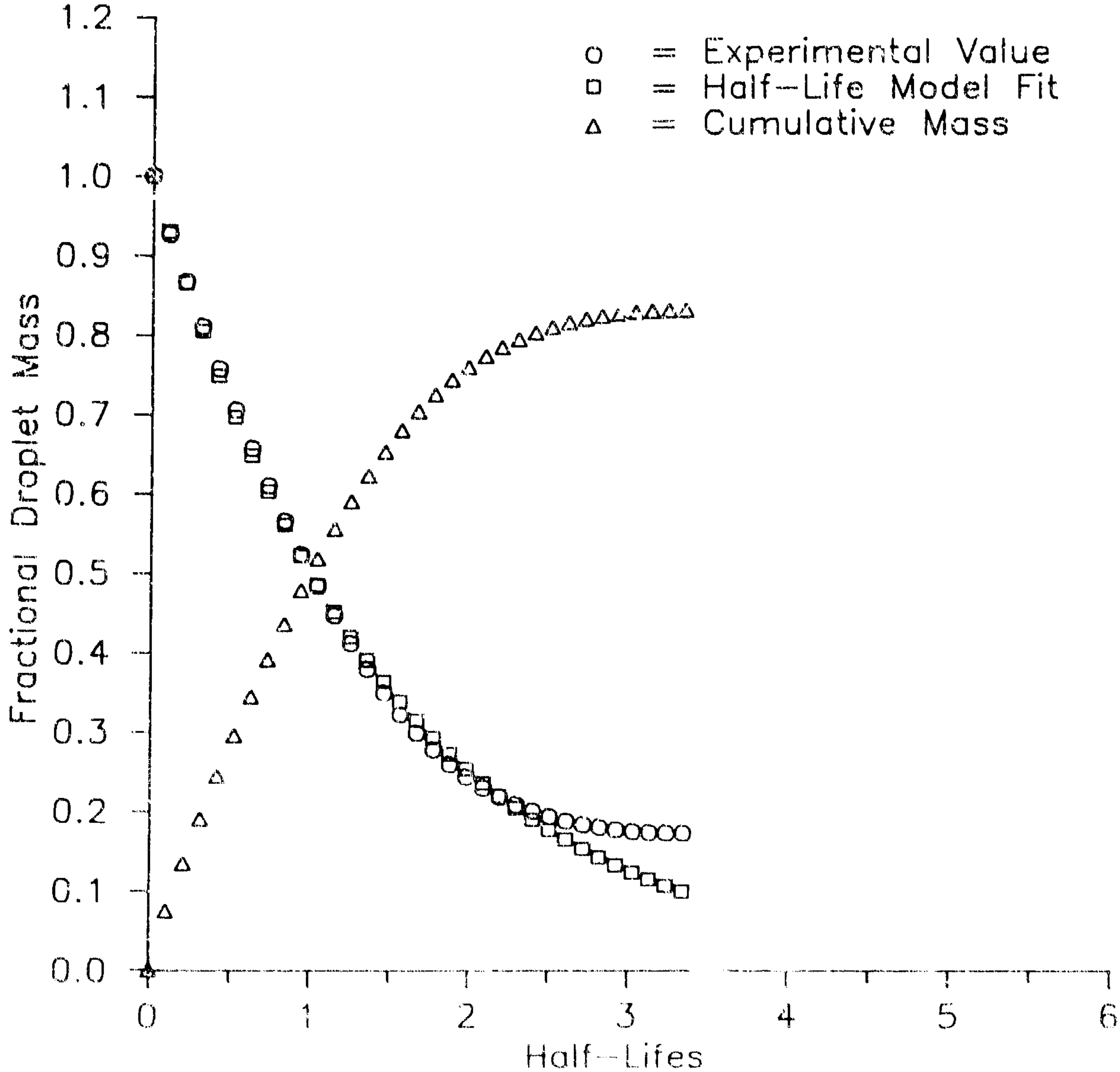

Figure I-10. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF11 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 55%

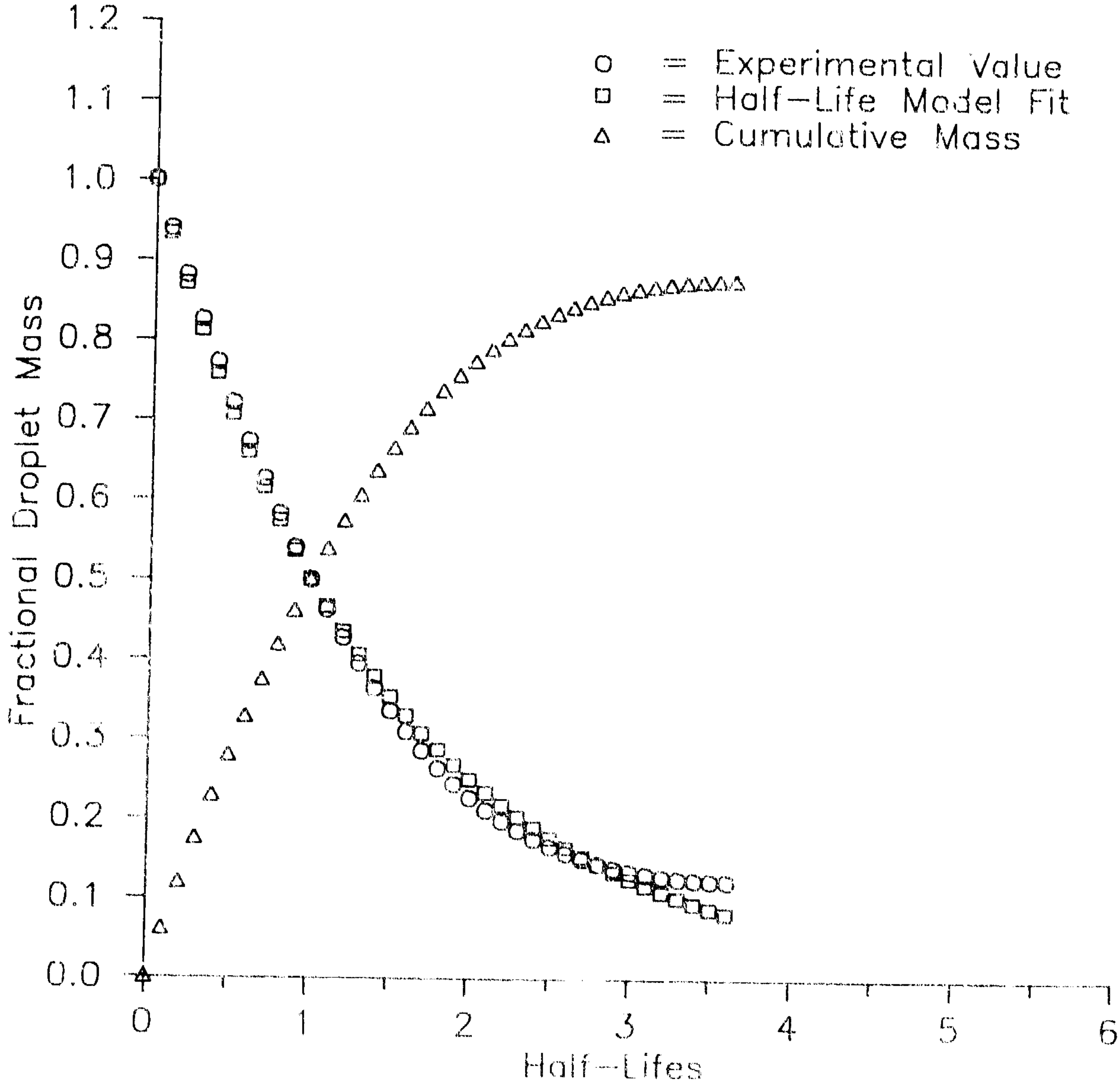

Figure I-11 Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF12 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 40%

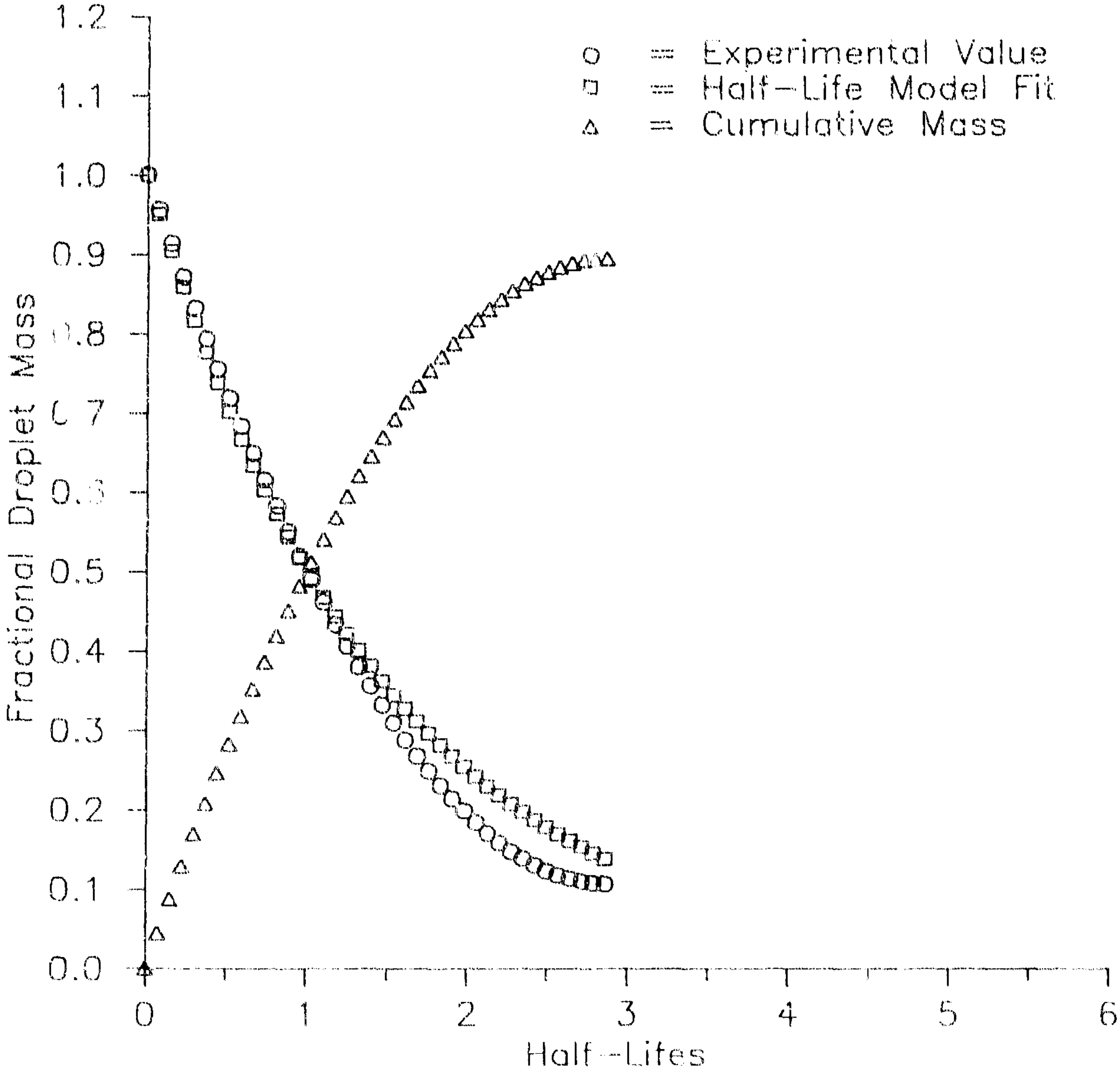

Figure I-12. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF13   SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA.,   100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F.,   RELATIVE HUMIDITY 44%

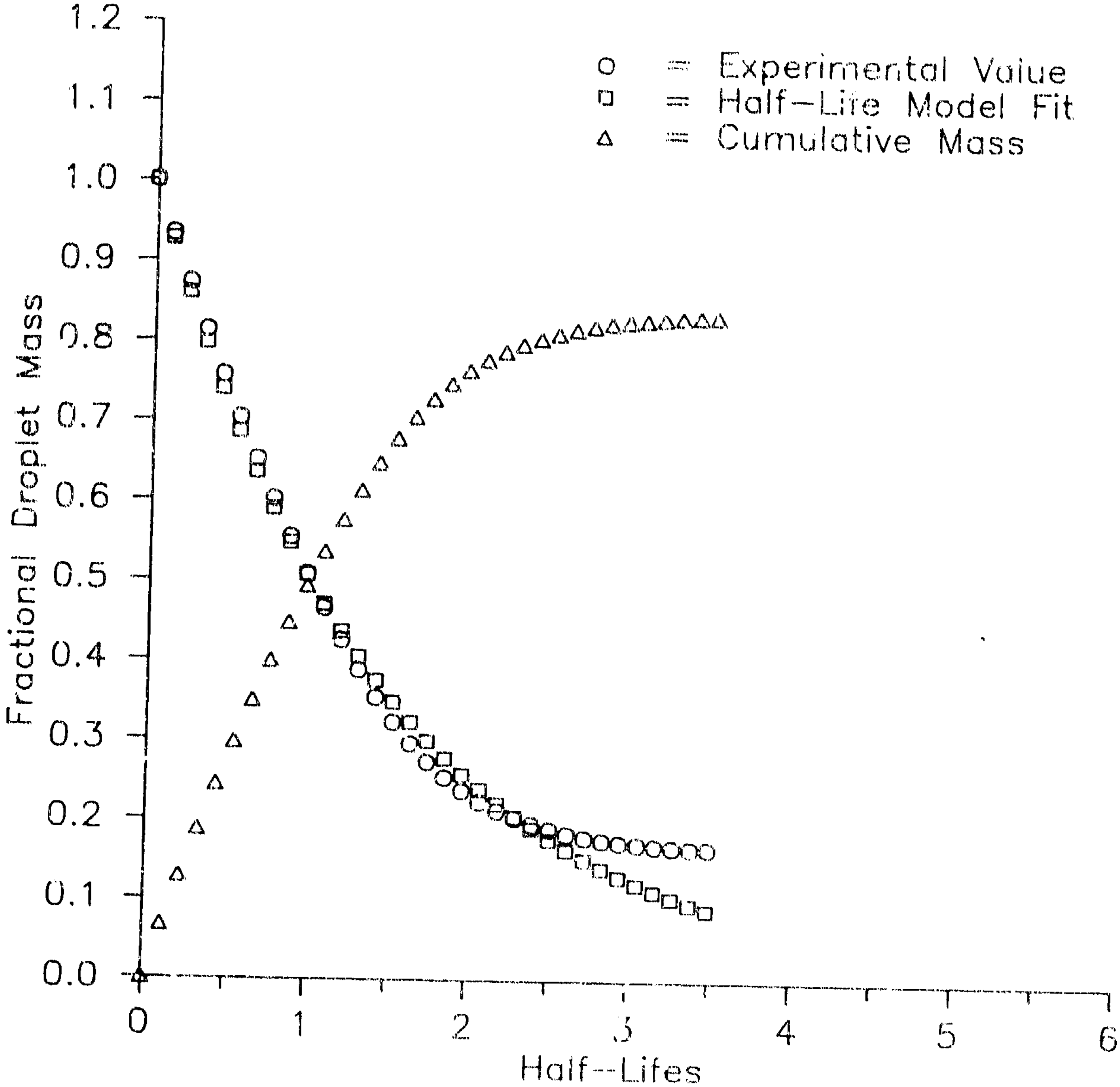

Figure I-13. Fractional Droplet Mass Versus Droplet Half-Life

EVAPORATION EXPERIMENT NO. GLF14 SERIES IC 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 2.8 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 43%

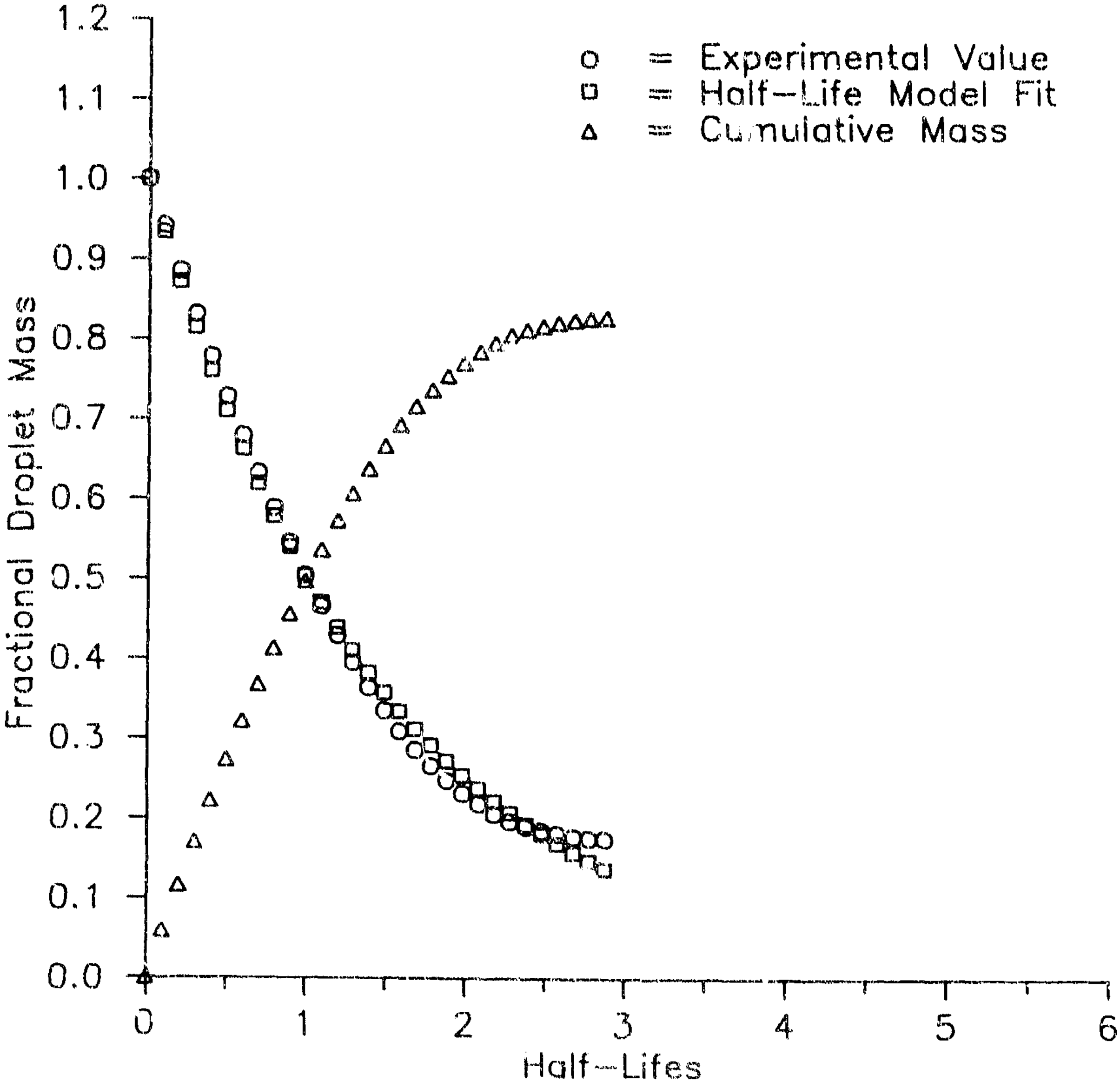

Figure I-14. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF15 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

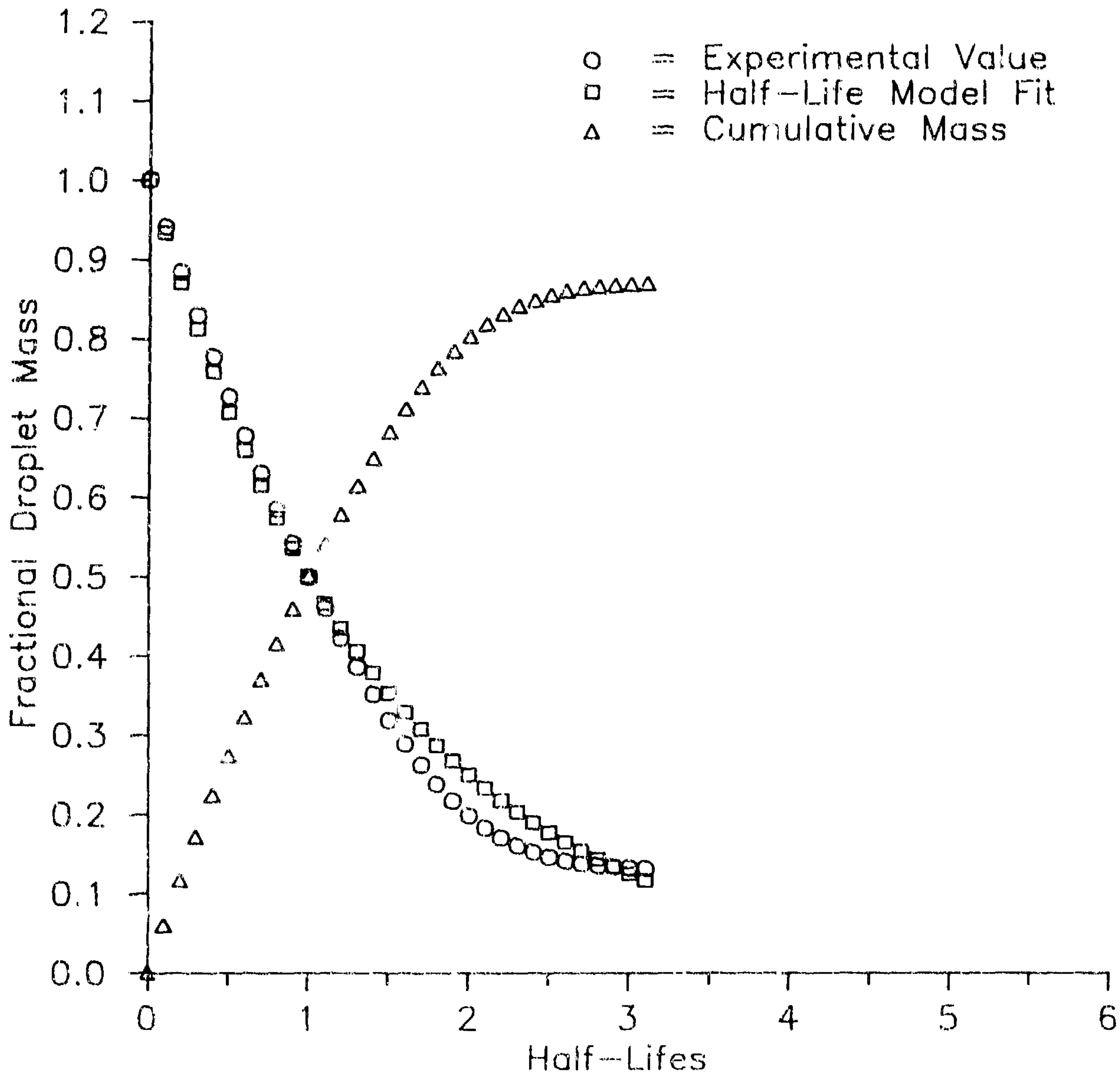

Figure I-15. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. GLF16 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

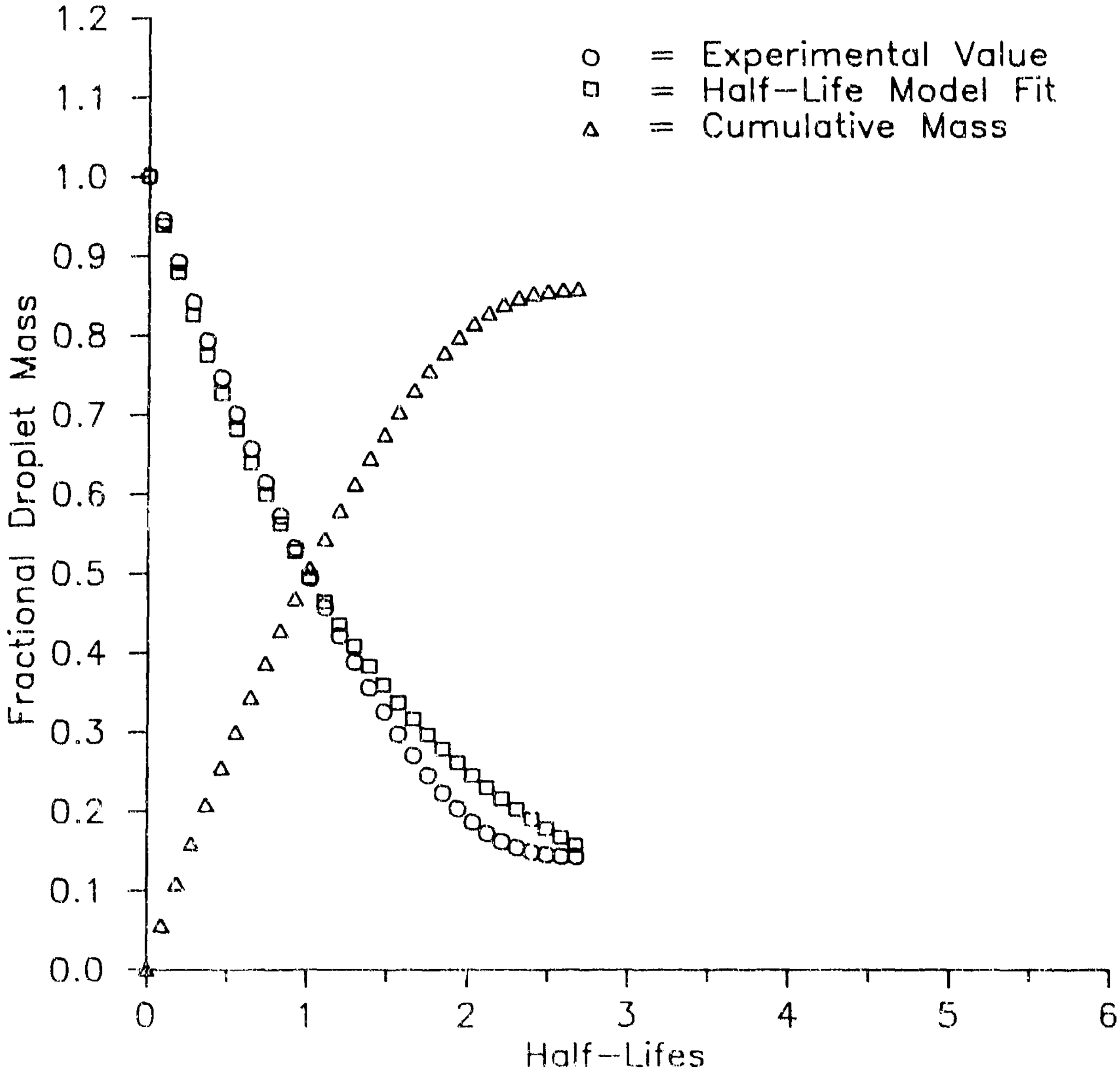

Figure I-16. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. BLF1 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

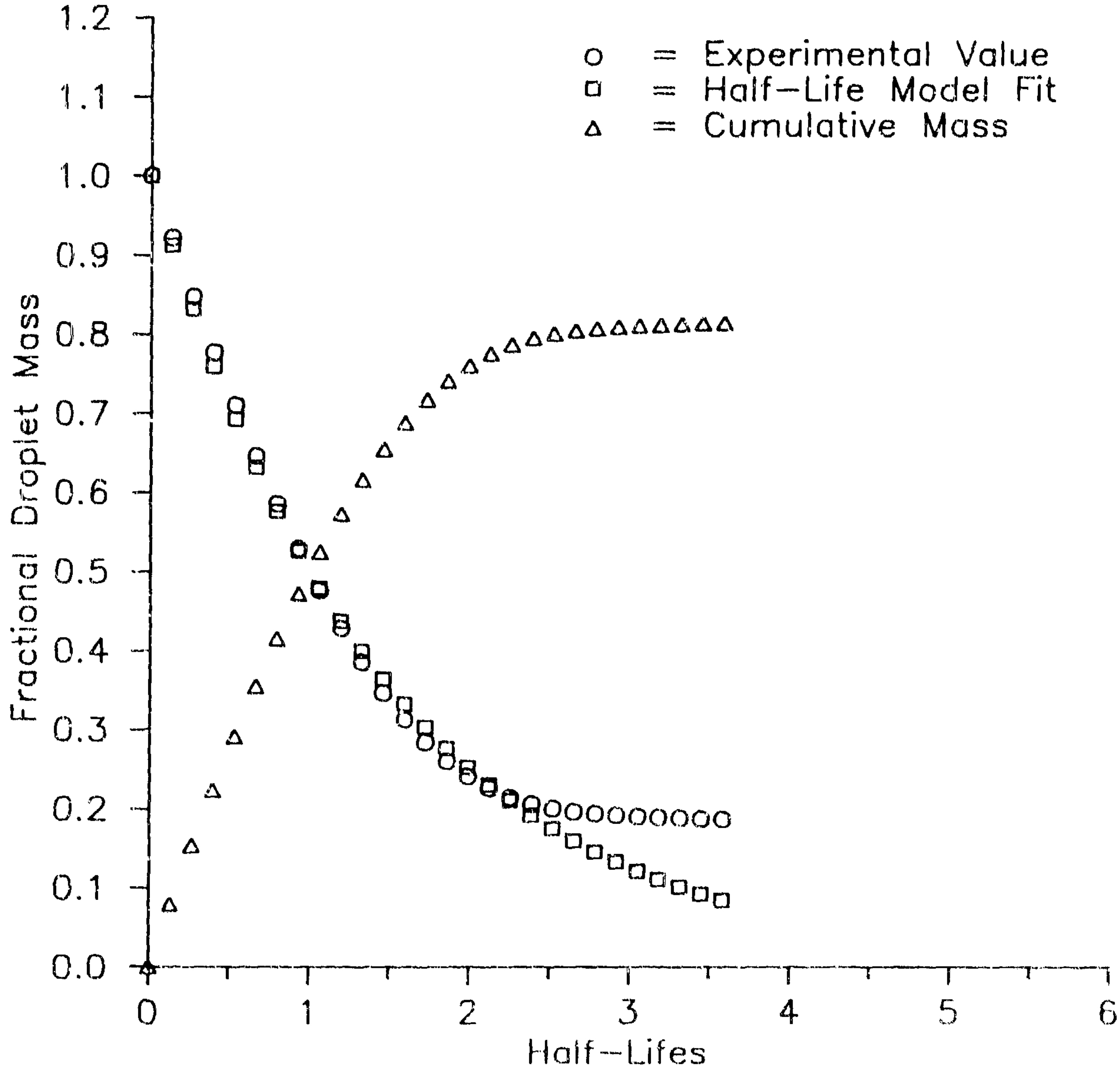

Figure I-17. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. BLF2 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 39%

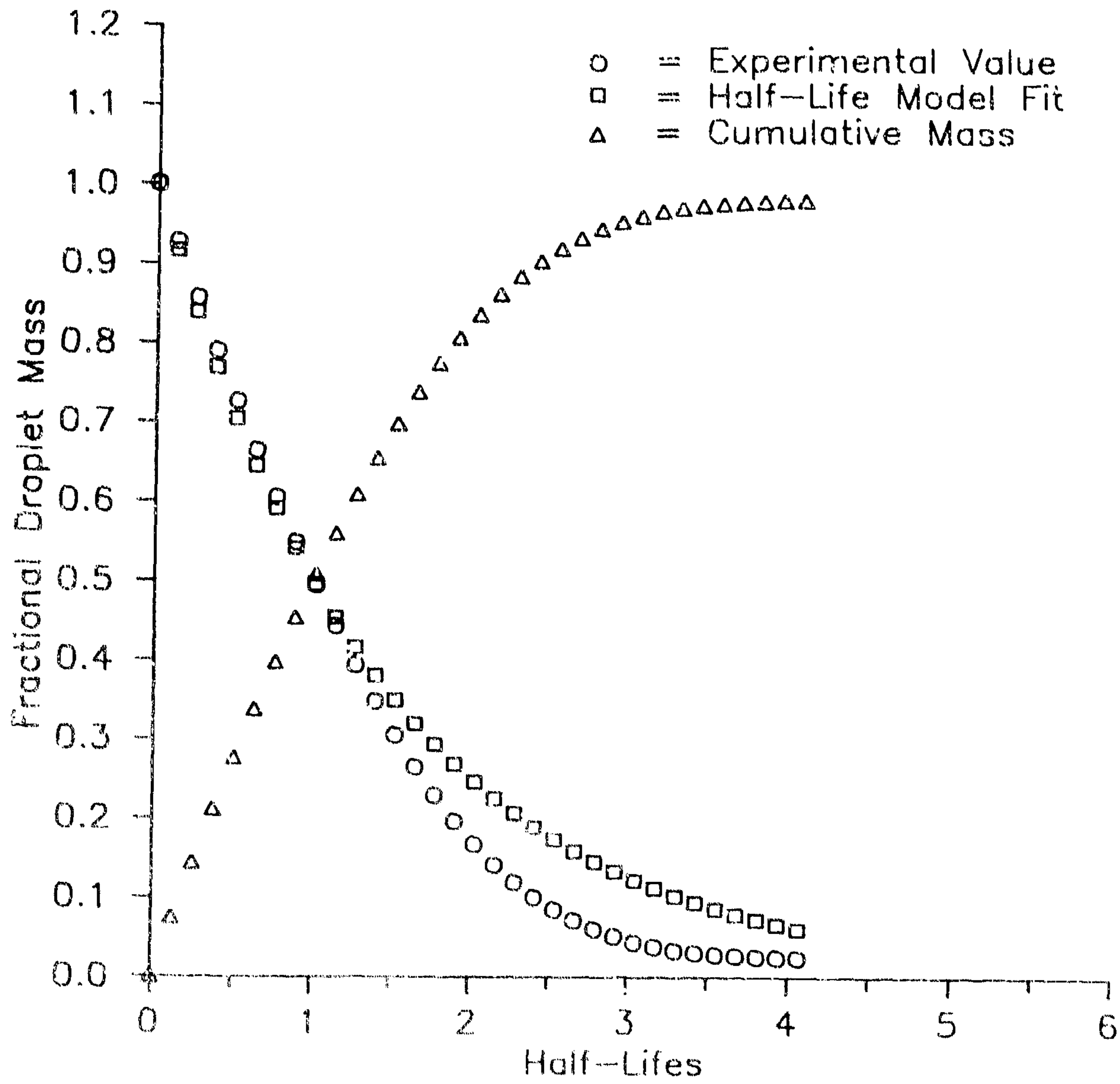

Figure I-18. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. BLF3   SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA.,   100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH,   AIR TEMPERATURE 60 DEG F.,   RELATIVE HUMIDITY 37%

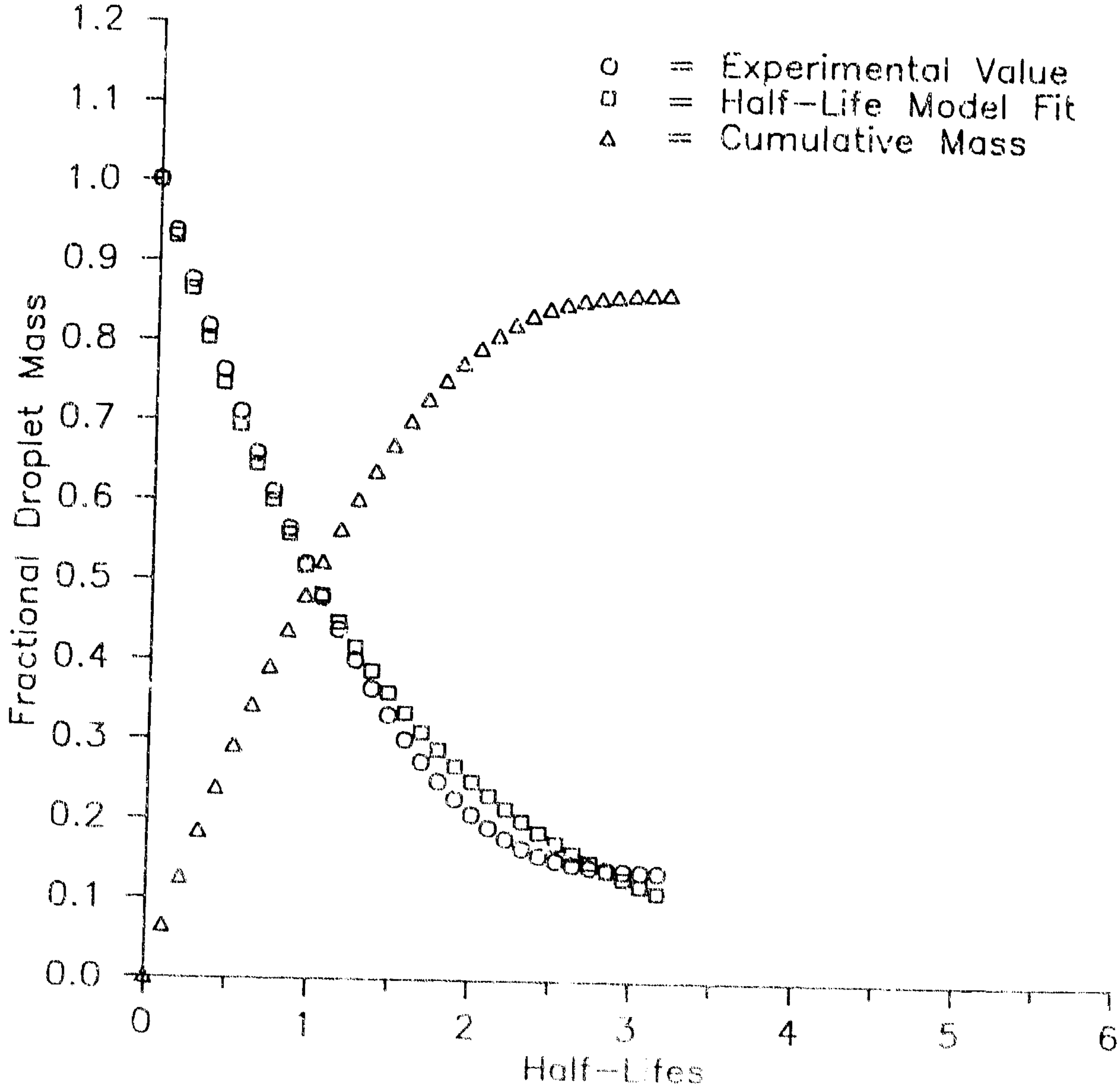

Figure I-19. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. BLF4 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/TOP SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 29%

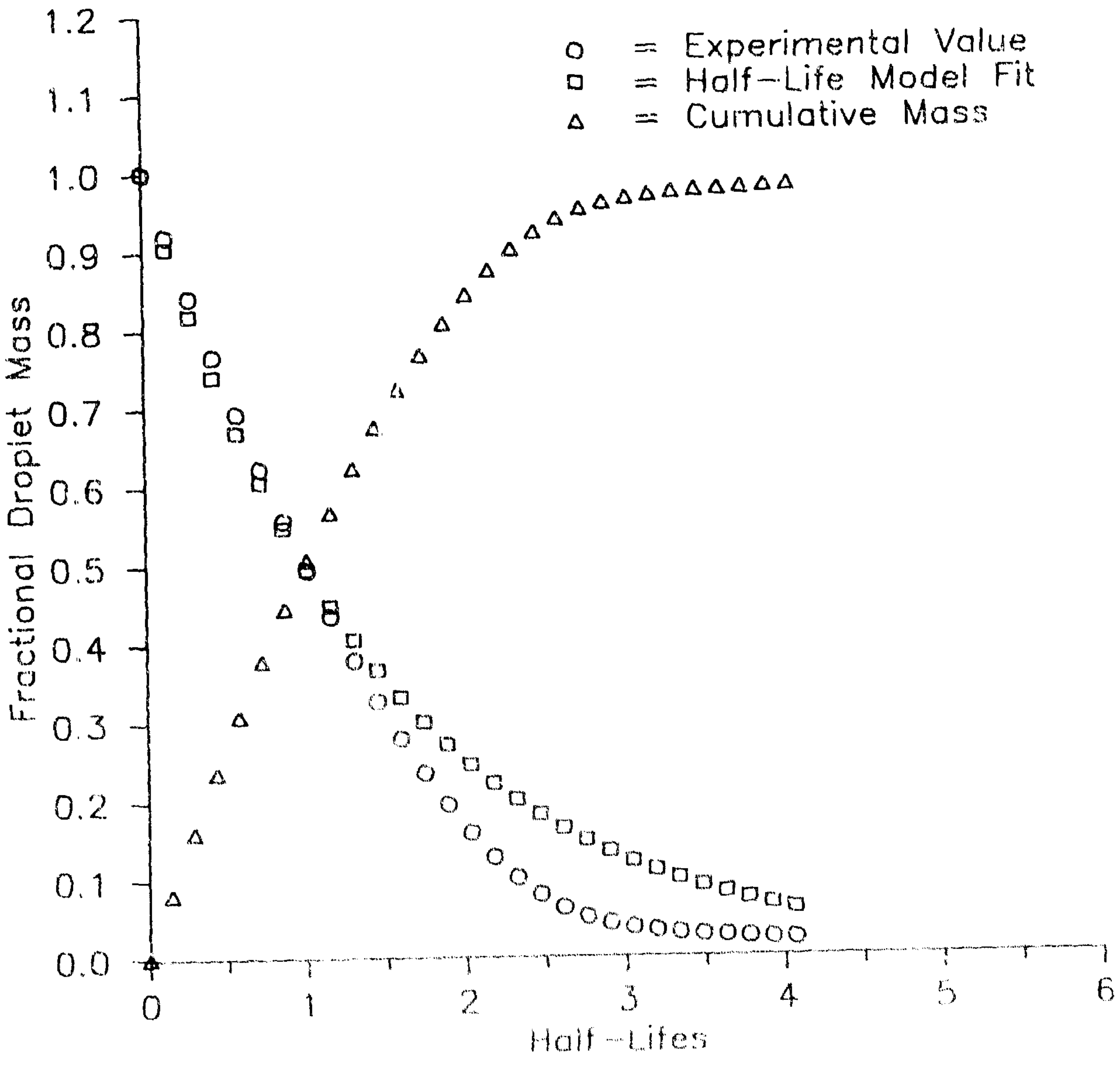

Figure I-20. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. BLF5 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 10 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 3.0 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

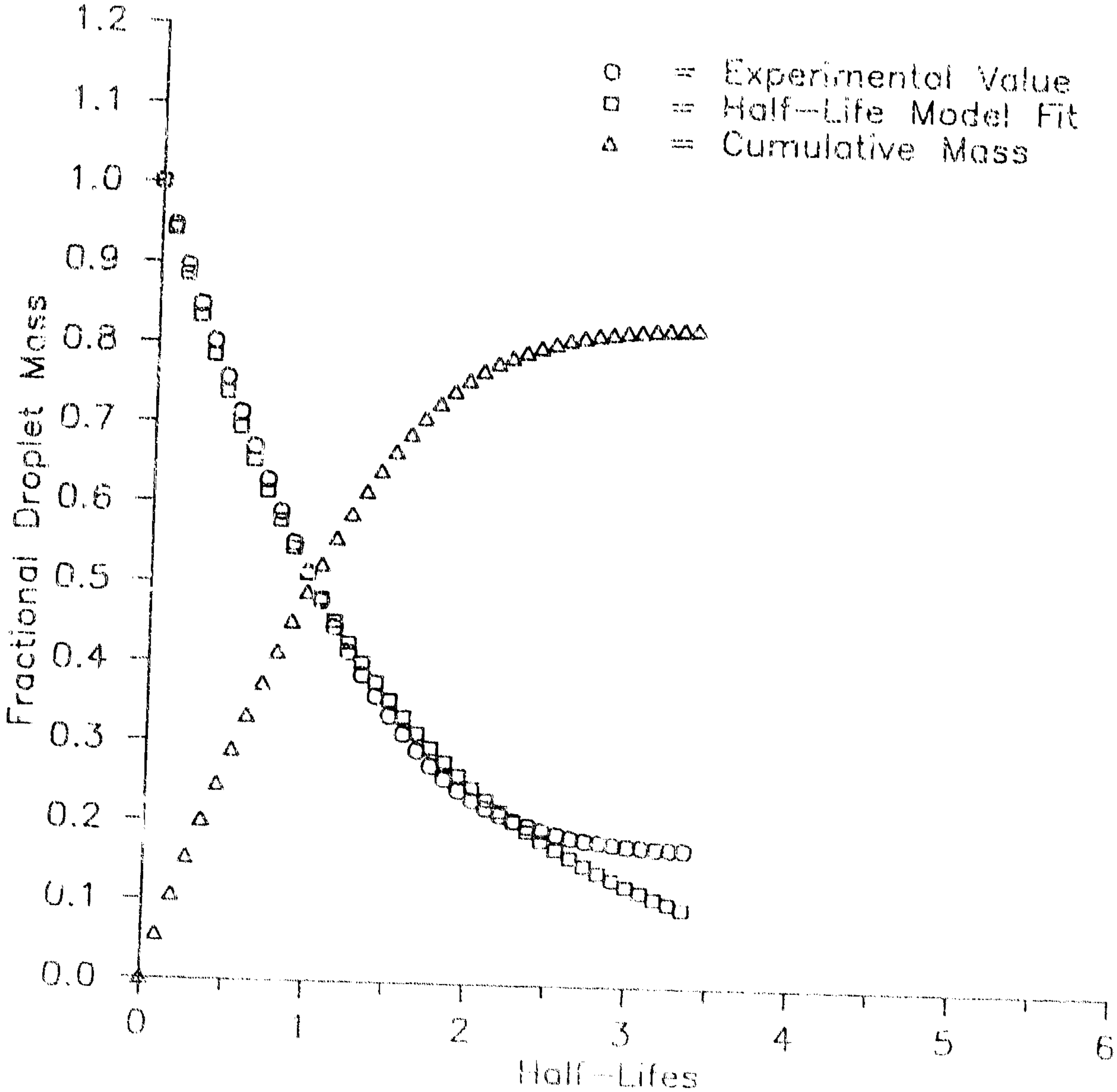

Figure I-21. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. BLF6 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 2.9 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 37%

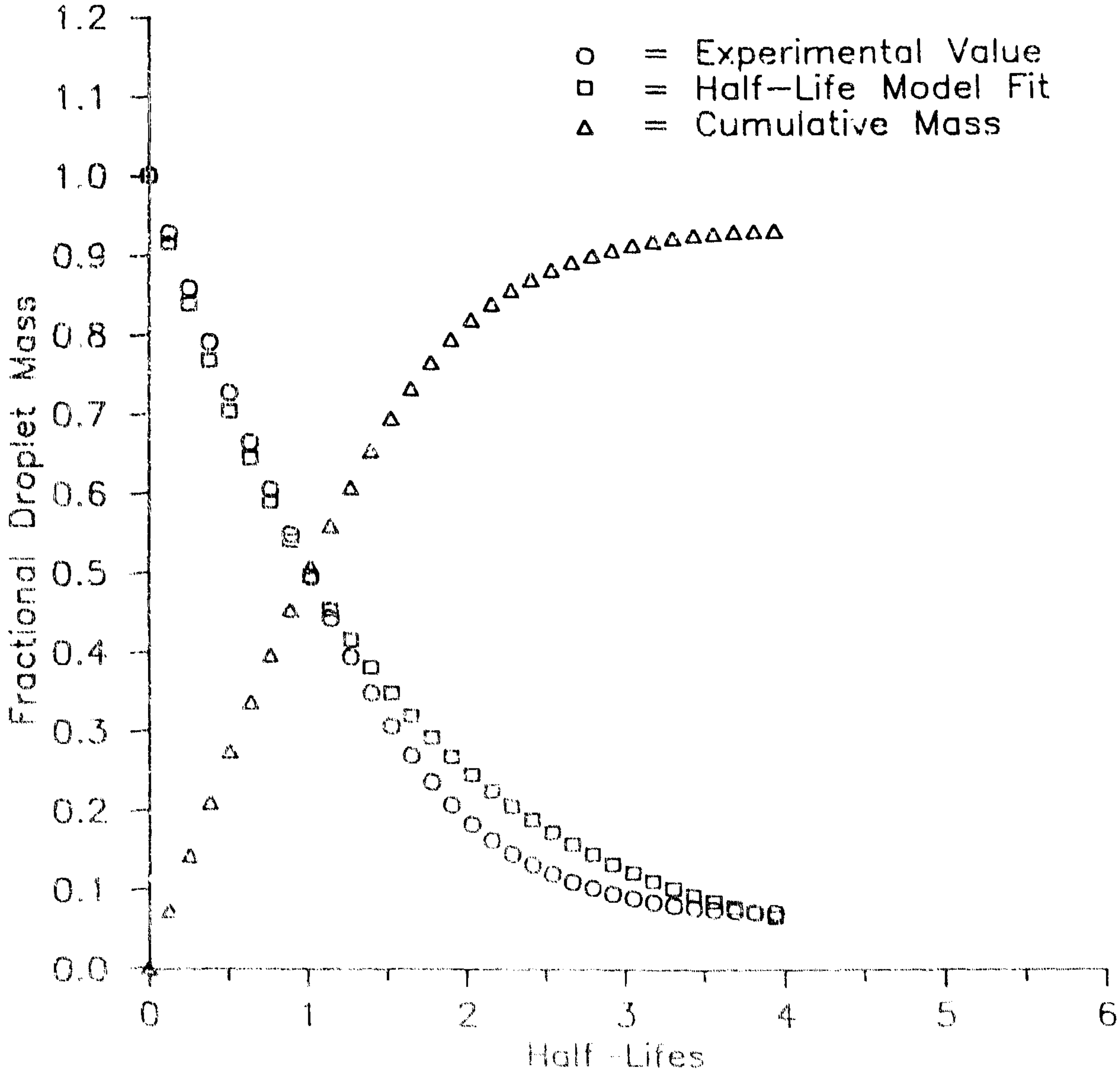

Figure I-22. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. BLF7 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 38%

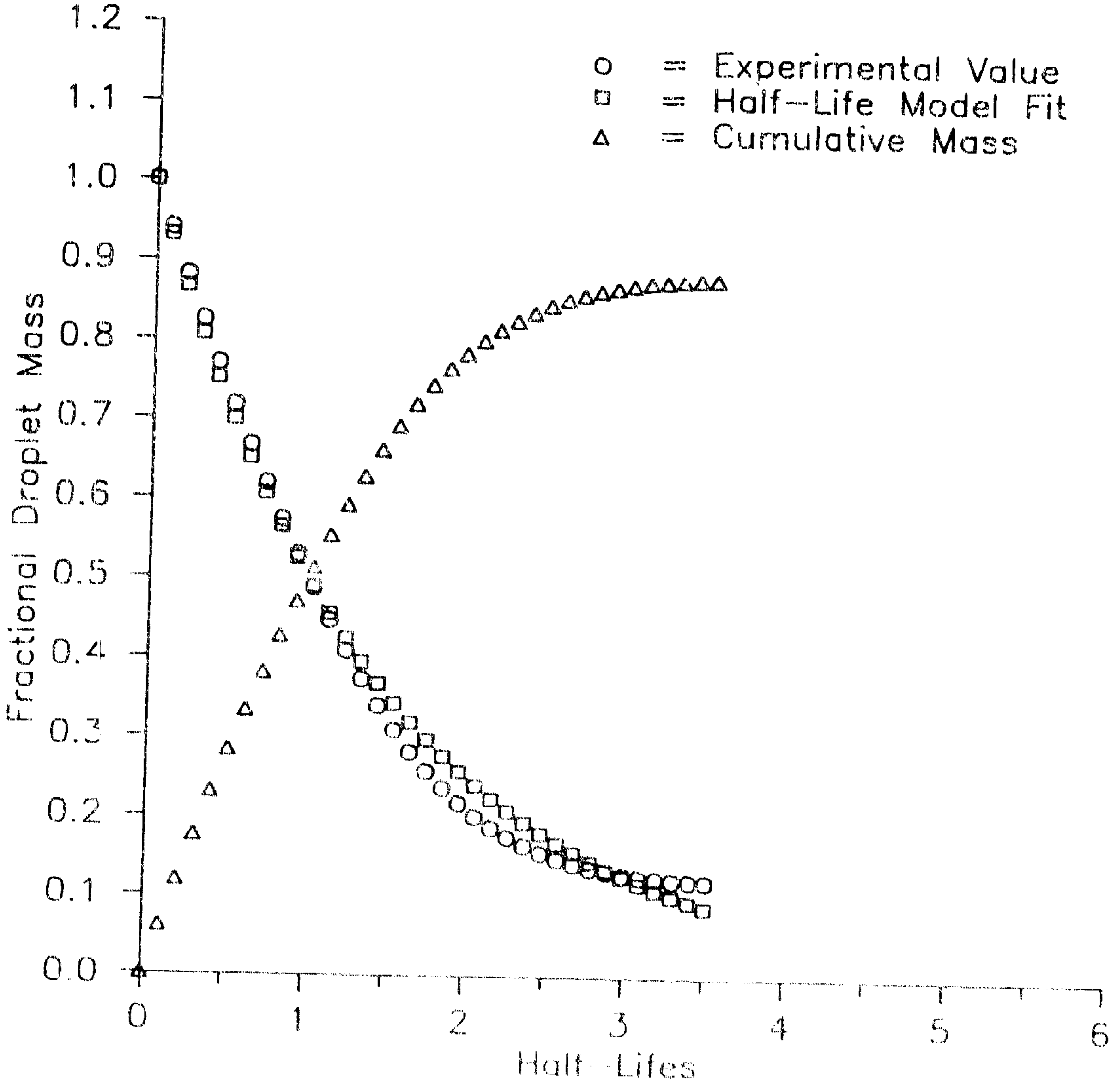

Figure I-23. Fractional Droplet Mass Versus Droplet Half-Life.

EVAPORATION EXPERIMENT NO. BLF8 SERIES ID 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK LEAF/BOTTOM SURFACE
WINDSPEED 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 50%

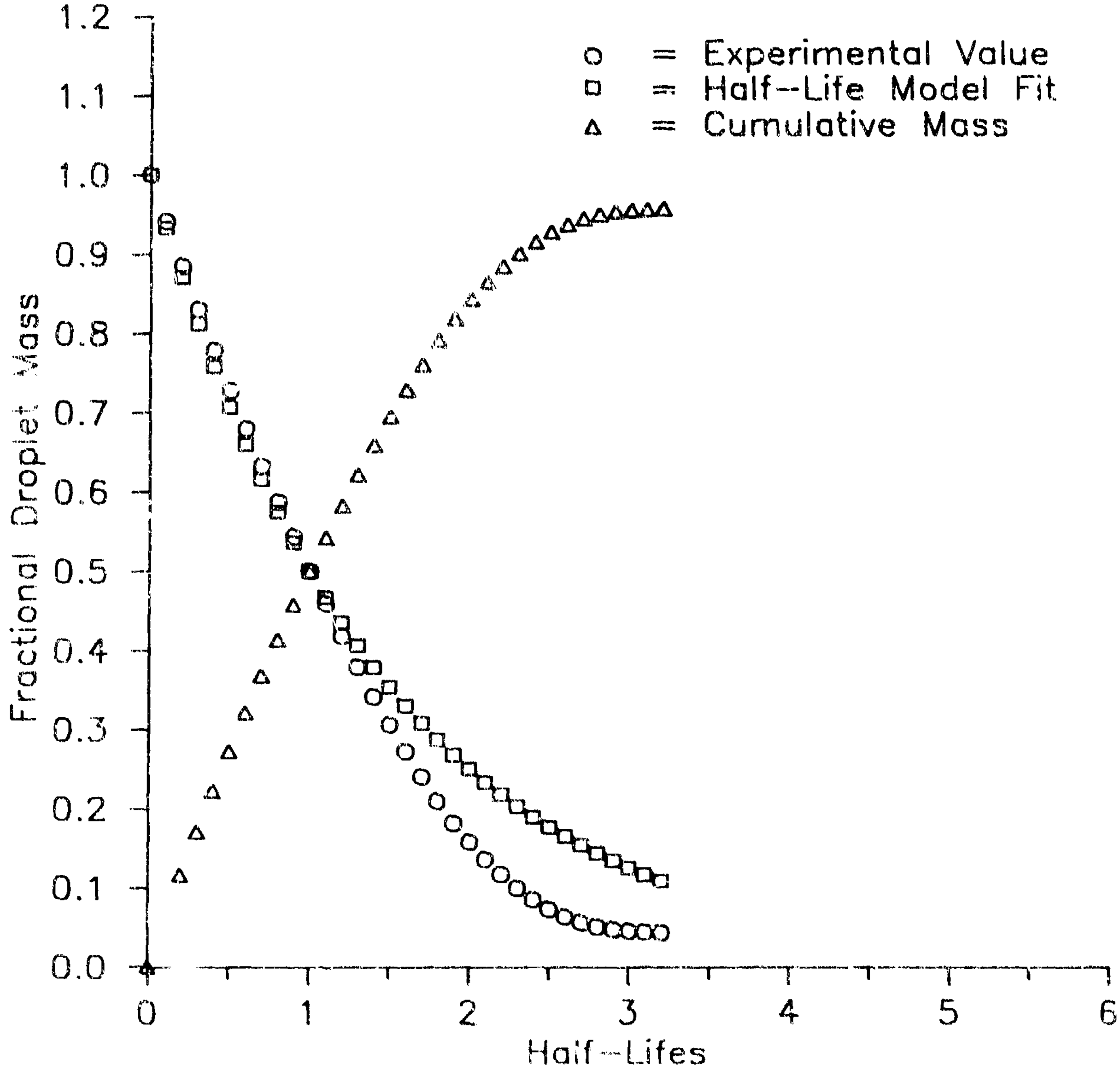

Figure I-24. Fractional Droplet Mass Versus Droplet Half-Life.

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APPENDIX J

DATA ON SPREADING OF DEM DROPLETS DEPOSITED ON LEAF SURFACES

TABLE J-1. Maximum, Minimum and Average Spread Diameters of 2 mm (Dia.) DEM Droplets Deposited On Green Hickory Leaves.

TEST #1 D1xD2 mm	mm	TEST #2 D1xD2 mm	mm	TEST #3 D1xD2 mm	mm	TEST #4 D1xD2 mm	mm	TEST #5 D1xD2 mm	mm	TEST #6 D1xD2 mm	mm	TEST #7 D1xD2 mm	mm	TEST #8 D1xD2 mm	mm
6	6	5	5	35	2	8	4	4	4	5	4	9	4	4	4
8	5	5	4	14	4	7	5	4	4	4	4	5	4	5	4
8	4	5	4	6	4	7	5	4	4	6	4	4	4	4	4
6	4	6	6	5	4	6	5	5	4	5	4	4	4	5	4
5	5	5	5	6	4	8	6	4	4	5	4	4	4	4	4
6	6	6	6	5	4	6	5	4	4	5	4	6	4	4	4
4	4	6	5	6	3	6	5	5	4	5	4	5	4	6	4
4	4	6	5	6	4	5	5	4	4	5	4	4	4	5	4
5	4	7	6	7	4	6	6	4	4	5	4	4	4	5	4
4	4	8	5	4	4	7	6	5	4	4	4	4	4	5	5
8	5	7	6	12	4	6	5	4	4	4	4	4	4	5	4
6	5	7	7	6	4	6	5	4	4	4	4	4	4	6	4
8	6	7	6	12	9	10	5	5	4	4	4	4	4	4	4
8	6	7	6	7	6	7	7	4	4	4	4	4	4	4	4
6	4	9	6	7	4	6	5	5	4	5	4	5	4	5	4
5	5	7	5	6	5	7	6	4	4	6	5	4	4	4	4
5	5	7	6	7	5	7	5	4	4	5	4	4	4	4	4
7	6	7	5	6	4	5	4	4	4	5	4	5	4	5	4
6	5	8	6	6	3	8	7	5	4	4	4	4	4	5	4
7	5	7	5	7	5	6	6	4	4	4	4	4	4	3	3
6	6	5	5	6	5	9	6	5	3	5	4	5	4	5	4
8	4	11	5	6	5	5	5	4	4	4	4	8	4	4	4
5	5	11	5	5	4	12	6	4	4	4	4	4	4	4	4
8	5	6	6	6	4	7	6	4	4	7	4	4	4	4	4
5	5	7	5	6	6	8	8	4	4	4	4	5	3	4	4
7	5	7	6	6	6	7	6	5	4	7	4	4	4	4	4
8	4	8	5	6	5	9	8	5	4	4	4	4	4	4	4
7	4	7	5	5	4	6	6	4	4	4	4	5	4	5	4
6	6	6	6	8	6	6	6	4	4	4	4	5	5	4	4
6	6	8	5	6	4	10	6	4	4	4	4	4	4	4	4
7	6	7	5	6	6	10	6	4	4	4	4	5	4	4	3
6	5	6	5	8	4	8	7	4	4	5	4	5	4	5	4
5	5	6	5	5	4	8	6	5	3	4	4	5	4	4	4
6	6	6	6	5	4	6	6	4	4	4	4	4	4	4	4
6	5	6	6	7	5	7	5	4	4	4	4	6	4	4	4
5	5	9	6	5	4	10	5	4	4	4	4	4	4	5	5
6	5	10	5	6	4	8	7	5	4	5	4	4	4	4	4
6	6	8	7	7	5	6	5	4	4	4	4	4	4	5	4
5	5	5	5	9	4	7	6	5	4	4	4	4	4	6	4
5	4	7	5	6	6	7	6	4	4	5	4	5	3	6	5
AVG 5.59mm +/- 0.81 s.d.		AVG 6.16mm +/- 0.87 s.d.		AVG 5.94mm +/- 40 s.d.		AVG 6.49mm +/- 1.03 s.d.		AVG 4.12mm +/- 0.22 s.d.		AVG 4.31mm +/- 0.43 s.d.		AVG 4.30mm +/- 0.55 s.d.		AVG 4.28mm +/- 0.47 s.d.	

TABLE J-2. Maximum, Minimum and Average Spread Diameters of 2 mm (Dia.) DEM Droplets Deposited on Green Oak Leaves.

TEST #9 D1xD2		TEST #10 D1xD2		TEST #11 D1xD2		TEST #12 D1xD2		TEST #13 D1xD2		TEST #14 D1xD2		TEST #15 D1xD2		TEST #16 D1xD2	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	5	6	4	8	5	6	5	4	4	4	4	-	-	5	4
6	4	7	4	5	5	5	3	4	5	5	4	-	-	4	4
6	4	5	5	8	5	6	[illegible]	4	5	4	4	-	-	5	4
6	5	6	4	8	5	9	[illegible]	4	4	4	4	-	-	4	4
7	4	6	5	6	5	6	6	4	4	4	4	-	-	4	4
5	5	4	4	5	5	7	5	4	4	4	4	-	-	4	4
6	5	5	5	6	4	5	3	4	4	5	4	-	-	4	4
6	5	5	4	5	5	6	4	4	5	5	4	-	-	4	4
6	5	8	5	6	6	6	4	4	4	4	4	-	-	4	4
8	5	5	4	6	5	6	4	4	4	5	4	-	-	4	4
9	5	6	6	5	5	5	5	4	4	4	4	-	-	5	4
6	6	6	5	6	6	5	4	4	4	4	3	-	-	5	4
7	6	8	5	5	5	6	4	4	5	5	5	-	-	4	4
9	5	6	6	6	5	7	5	4	4	5	4	-	-	5	4
5	4	7	5	5	4	7	4	4	4	4	4	-	-	4	4
10	5	6	5	6	5	6	6	4	4	5	4	-	-	4	4
10	6	5	5	6	5	4	4	4	4	4	4	-	-	4	4
6	5	5	5	8	5	4	4	5	4	5	4	-	-	4	4
12	5	5	4	7	6	5	4	4	4	5	4	-	-	4	4
6	5	6	6	7	5	9	3	4	4	4	4	-	-	4	4
12	5	6	5	6	6	6	5	4	4	4	4	-	-	4	4
9	7	5	5	8	6	6	4	5	4	5	3	-	-	4	4
9	8	6	5	6	5	8	4	4	4	4	4	-	-	4	4
7	6	6	5	9	5	4	4	4	4	5	3	-	-	5	4
6	6	5	5	12	4	4	4	5	4	6	3	-	-	4	4
6	6	8	6	7	6	6	5	4	4	5	4	-	-	4	4
5	4	7	4	8	3	5	5	4	4	4	4	-	-	6	3
7	4	9	4	7	4	8	6	5	4	5	4	-	-	4	4
5	4	6	6	5	4	6	5	4	4	5	4	-	-	4	4
5	5	7	5	5	5	5	4	4	4	4	4	-	-	5	4
6	4	6	5	4	4	7	4	4	4	5	4	-	-	5	4
6	6	7	4	7	5	5	4	5	4	6	3	-	-	4	4
10	5	5	5	5	4	6	5	6	4	4	4	-	-	4	4
6	5	6	5	5	4	7	5	5	4	5	3	-	-	4	4
11	5	7	5	5	4	5	5	4	4	4	4	-	-	4	4
6	6	7	5	5	4	4	4	4	4	5	4	-	-	4	4
8	6	8	5	4	4	4	4	4	4	4	4	-	-	4	4
9	6	6	4	6	5	7	5	4	4	5	4	-	-	4	4
8	5	7	5	6	6	6	6	5	4	4	4	-	-	5	3
6	5	7	5	5	4	6	5	4	4	5	4	-	-	4	4
AVG 6.19mm +/- 1.12 s.d.		AVG 5.53mm +/- 0.65 s.d.		AVG 5.13mm +/- 2.11 s.d.		AVG 5.18mm +/- 0.85 s.d.		AVG 4.18mm +/- 0.27 s.d.		AVG 4.22mm +/- 0.30 s.d.		AVG - +/- -		AVG 4.11mm +/- 0.21 s.d.	

TABLE J-3. Maximum, Minimum and Average Spread Diameters of 2 mm (Dia.) DEM Droplets Deposited on Red Oak Leaves.

TEST #1 D1xD2		TEST #2 D1xD2		TEST #3 D1xD2		TEST #4 D1xD2		TEST #5 D1xD2		TEST #6 D1xD2		TEST #7 D1xD2		TEST #8 D1xD2	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4	5	5	5	5	4	5	5	6	4	4	4	5	4	5	4
6	3	4	4	4	4	5	4	4	4	4	4	5	4	4	4
4	4	5	5	4	4	4	4	4	4	4	4	5	4	5	5
5	4	5	4	6	4	5	5	4	4	4	4	4	4	5	4
4	4	5	5	6	4	4	4	3	3	4	4	4	4	4	4
4	4	4	4	5	4	5	5	3	3	4	4	5	4	5	4
4	4	5	5	5	4	5	4	4	4	4	4	5	4	5	4
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	4	5	4	4	4	5	5	4	4	4	4	5	4	4	3
5	4	5	5	4	4	5	5	4	4	5	4	4	4	7	4
5	4	5	4	4	4	4	4	4	4	4	4	4	4	5	4
5	4	5	4	4	4	5	5	4	4	4	4	4	4	4	4
5	5	5	5	5	4	5	4	4	3	4	4	4	4	4	4
5	4	5	5	5	4	4	4	4	4	4	4	5	4	4	4
4	4	5	4	5	4	4	4	4	4	4	4	4	4	4	4
5	4	5	5	4	4	5	4	5	4	4	4	5	4	5	5
5	5	5	5	4	4	5	4	4	4	4	4	4	4	4	3
4	4	5	5	5	3	4	4	4	4	4	4	4	4	4	4
4	4	5	4	4	4	4	4	4	4	4	4	6	4	4	4
5	4	5	5	5	4	4	4	4	3	4	4	4	4	4	[illegible]
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	[illegible]
4	4	5	5	4	4	7	3	4	4	4	4	5	3	4	4
5	4	5	4	5	5	6	4	4	4	4	4	4	4	4	4
4	4	5	5	5	4	6	5	4	4	4	4	4	4	4	4
5	5	5	5	5	4	5	5	4	4	4	4	4	4	4	4
5	5	4	4	4	4	6	5	4	4	4	4	4	4	4	4
5	4	4	4	4	4	6	5	4	4	4	4	4	4	4	4
6	4	5	4	4	4	4	4	4	4	5	4	5	4	4	4
5	4	4	4	6	3	5	4	4	4	4	4	4	4	4	4
6	5	4	4	6	3	5	5	4	4	4	4	4	4	4	4
6	5	4	4	4	4	5	4	4	4	5	4	4	4	4	4
5	4	5	5	4	4	4	4	4	4	5	4	6	4	4	4
5	4	5	4	4	4	4	4	4	4	5	3	4	4	4	4
5	4	5	4	4	4	4	4	5	4	4	4	5	4	5	4
5	4	6	5	4	4	5	5	4	4	4	4	4	4	4	4
5	4	6	5	5	4	5	5	4	4	4	4	5	4	4	4
5	4	4	4	4	4	7	5	4	4	4	4	4	4	4	4
5	4	4	4	4	4	5	5	4	4	4	4	4	4	4	4
5	4	5	4	4	4	7	5	4	4	4	4	4	3	4	4
6	5	4	4	4	4	5	5	4	4	4	4	4	4	4	4
AVG 4.50mm +/- 0.42 s.d.		AVG 4.59mm +/- 0.46 s.d.		AVG 4.25mm +/- 0.36 s.d.		AVG 4.65mm +/- 0.59 s.d.		AVG 3.98mm +/- 0.32 s.d.		AVG 4.04mm +/- 0.14 s.d.		AVG 4.15mm +/- 0.28 s.d.		AVG 4.13mm +/- 0.38 s.d.	

APPENDIX K

FACTORIAL ANALYSIS AND HALF NORMAL PROBABILITY PLOTS OF STANDARDIZED ABSOLUTE CONTRASTS FOR TESTS ON OAK AND HICKORY LEAVES

TABLE K-1. THE DESIGN MATRIX FOR THE 2^4 FACTORIAL EXPERIMENT NO. 1.

TEST	VARIABLES 1	2	3	4	CONTRAST CONFOUNDING
1	−	−	−	−	MEAN
2	+	−	−	−	1
3	−	+	−	−	2
4	+	+	−	−	12
5	−	−	+	−	3
6	+	−	+	−	13
7	−	+	+	−	23
8	+	+	+	−	123
9	−	−	−	+	4
10	+	−	−	+	14
11	−	+	−	+	24
12	+	+	−	+	124
13	−	−	+	+	34
14	+	−	+	+	134
15	−	+	+	+	234
16	+	+	+	+	1234

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(−)100 CP
2:	WIND SPEED	(+)11 MPH	(−)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(−)TOP
4:	LEAF TYPE	(+)OAK	(−)HICKORY

TABLE K-2. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES HALF-LIFE OF DROPLET (2 MM DIA) CONTAMINATION DEPOSITED ON LEAFY SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	246	218.7	-
2	1	264	22.4	2002.5625
3	2	84	-178.9	127985.063
4	12	98	-4.9	95.0625
5	3	320	72.4	20952.5625
6	13	332	-5.1	105.0625
7	23	148	-22.9	2093.0625
8	123	156	-2.4	22.5625
9	4	245	25.4	2575.5625
10	14	287	9.4	351.5625
11	24	100	-9.9	390.0625
12	124	136	-2.9	33.0625
13	34	367	6.4	162.5625
14	134	404	-2.1	18.0625
15	234	150	-17.9	1278.0625
16	1234	162	-2.4	22.5625
			TOTAL =	158087.438

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-3. RANKED STANDARDIZED MAGNITUDE OF EFFECTS HALF-LIFE OF DROPLET (2 MM DIA) CONTAMINATION DEPOSITED ON LEAFY SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	178.9	96.67	7.99	98.33
14	3	72.4	90	3.23	95
13	4	25.4	83.33	1.13	91.67
12	23	22.9	76.67	1.02	88.33
11	1	22.4	70	1	85
10	234	17.9	63.33	.8	81.67
9	24	9.9	56.67	.44	78.33
8	14	9.4	50	.42	75
7	34	6.4	43.33	.29	71.67
6	13	5.1	36.67	.23	68.33
5	12	4.9	30	.22	65
4	124	2.9	23.33	.13	61.67
3	1234	2.4	16.67	.11	58.33
2	123	2.4	10	.11	55
1	134	2.1	3.33	.09	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

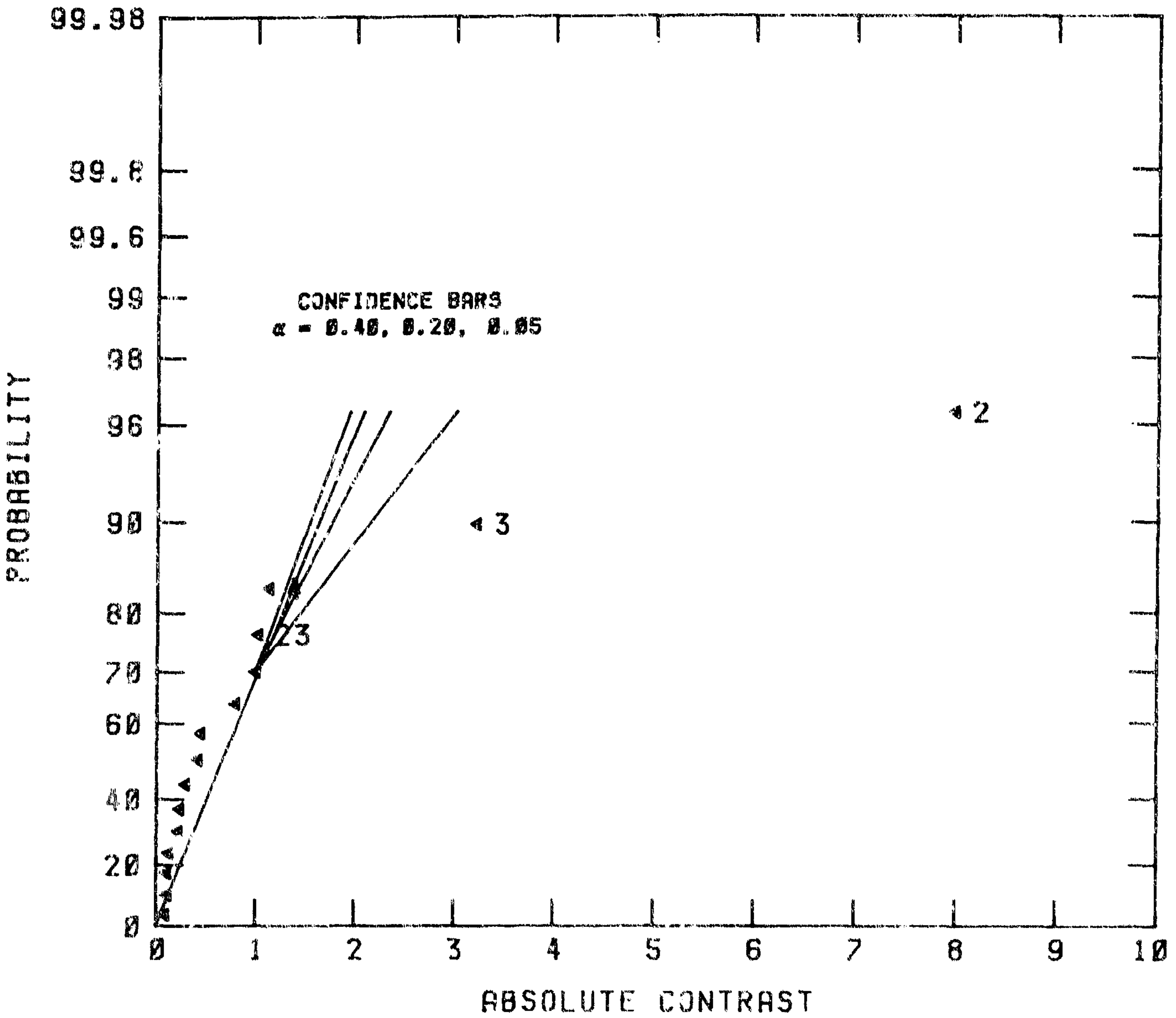

FIGURE K-1. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT
HALF-LIFE OF 2 MM DIAMETER DROPS
DEPOSITED ON LEAF SURFACE AT 80 DEG F AND 42% RH

TABLE K-4. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) OVER HALF-LIFE OF DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	13	17.3	-
2	1	12	-.2	.25
3	2	33	14.8	870.25
4	12	33	-.5	1
5	3	9	-6.5	169
6	13	9	.8	2.25
7	23	20	-3.2	42.25
8	123	21	.5	1
9	4	10	-3	36
10	14	11	-.2	.25
11	24	28	-1.2	6.25
12	124	24	-1	4
13	34	7	1.5	9
14	134	8	.3	.25
15	234	19	1.3	6.25
16	1234	19	.5	1

TOTAL = 1149

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-5. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) OVER HALF-LIFE OF DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	14.8	96.67	9.87	98.33
14	3	6.5	90	4.33	95
13	23	3.2	83.33	2.13	91.67
12	4	3	76.67	2	88.33
11	34	1.5	70	1	85
10	234	1.3	63.33	.87	81.67
9	24	1.2	56.67	.8	78.33
8	124	1	50	.67	75
7	13	.8	43.33	.53	71.67
6	1234	.5	36.67	.33	68.33
5	123	.5	30	.33	65
4	12	.5	23.33	.33	61.67
3	134	.3	16.67	.2	58.33
2	14	.2	10	.13	55
1	1	.2	3.33	.13	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

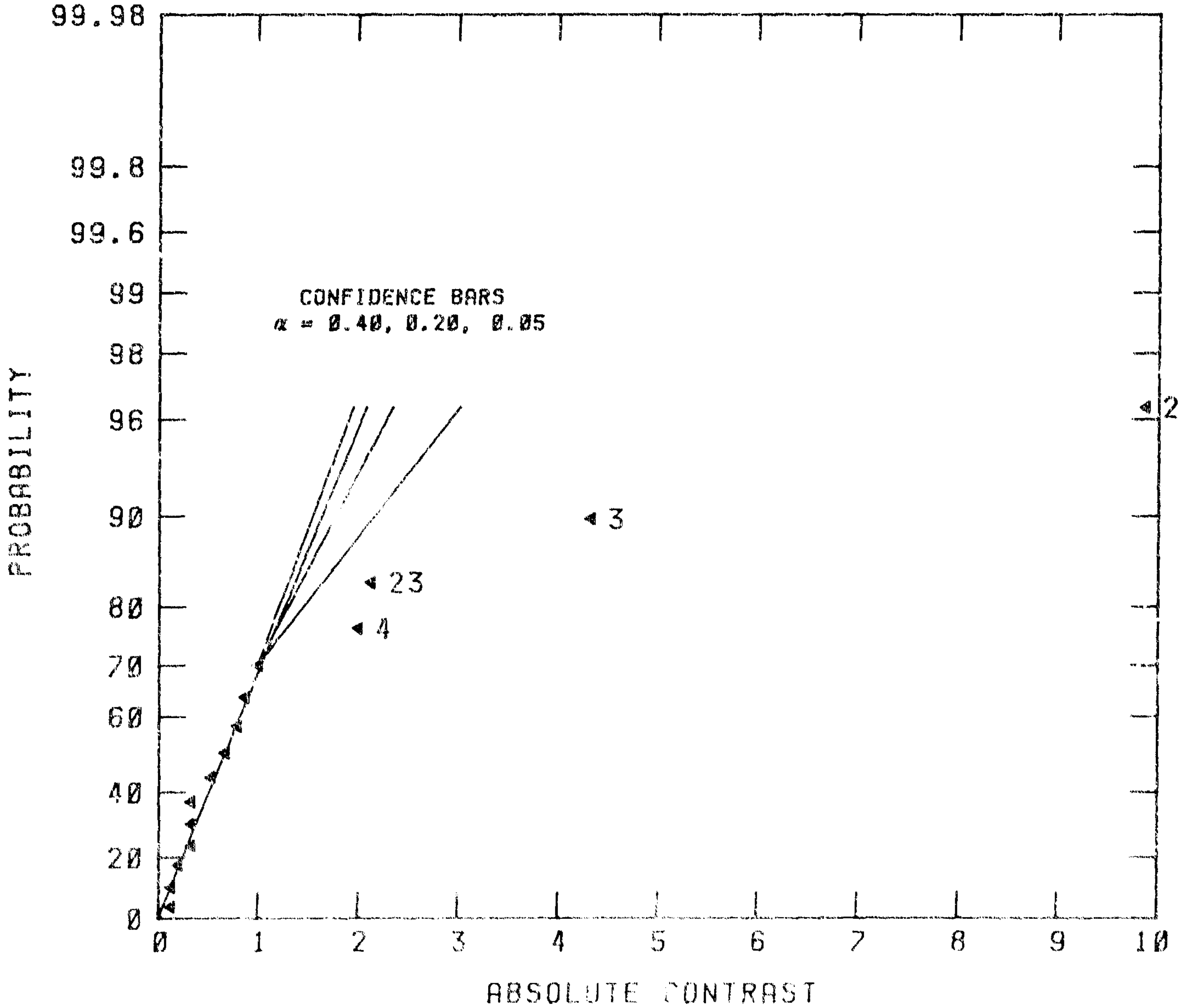

FIGURE K-2. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE OVER HALF-LIFE OF 2 MM DIA DROPS DEPOSITED ON LEAF SURFACE AT 60 DEG F AND 42% RH

TABLE K-6. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES TOTAL PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	76	84.1	-
2	1	84	3.1	39.0625
3	2	84	7.9	248.0625
4	12	94	-.1	.0625
5	3	75	-1.4	7.5625
6	13	77	-2.4	22.5625
7	23	87	-.1	.0625
8	123	89	-.1	.0625
9	4	80	1.6	10.5625
10	14	83	-2.4	22.5625
11	24	88	-2.6	27.5625
12	124	89	-.6	1.5625
13	34	83	1.1	5.0625
14	134	83	1.1	5.0625
15	234	87	-1.6	10.5625
16	1234	86	.4	.5625
			TOTAL =	400.9375

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-7. RANKED STANDARDIZED MAGNITUDE OF EFFECTS
TOTAL PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED
AS VAPOR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	7.9	96.67	3.29	98.33
14	1	3.1	90	1.29	95
13	24	2.6	83.33	1.08	91.67
12	14	2.4	76.67	1	88.33
11	13	2.4	70	1	85
10	234	1.6	63.33	.67	81.67
9	4	1.6	56.67	.67	78.33
8	3	1.4	50	.58	75
7	134	1.1	[illegible].33	.46	71.67
6	34	1.1	36.67	.46	68.33
5	124	.6	30	.25	65
4	1234	.4	23.33	.17	61.67
3	123	.1	16.67	.04	58.33
2	23	.1	10	.04	55
1	12	.1	3.33	.04	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS
THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

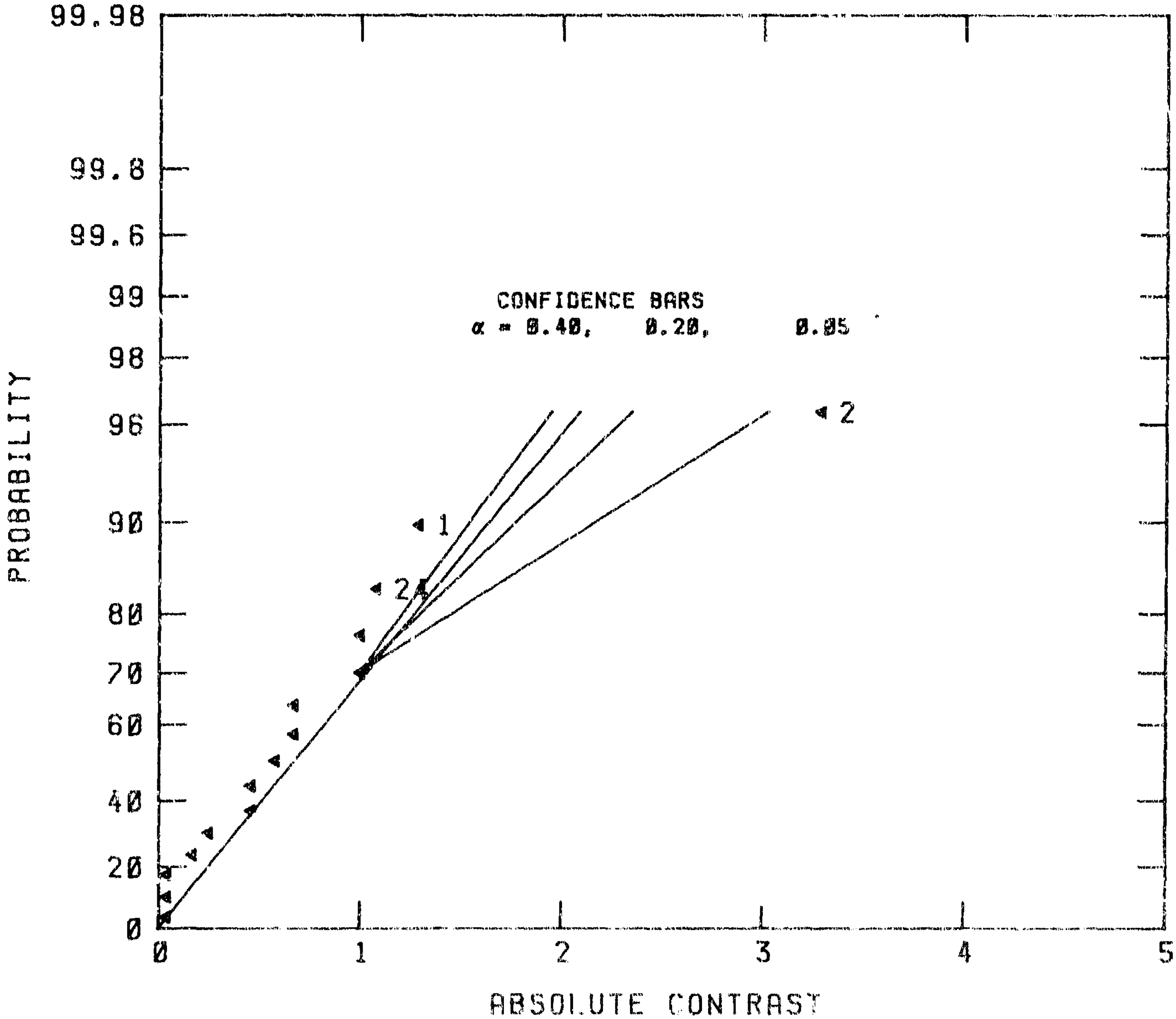

FIGURE K-3. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT TOTAL PERCENT OF CONTAMINATION RECOVERED AS VAPOR FROM 2 MM DIA DROPS ON LEAF SURFACE AT 80 DEG F AND 42% RH

TABLE K-8. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES LIFE TIME OF DROPLET (2 MM DIA) CONTAMINATION ON LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	870	698.8	-
2	1	1020	31.3	3906.25
3	2	360	-562.5	1265625
4	12	370	-28.7	3306.25
5	3	870	120	57600.0001
6	13	900	-61.2	15006.25
7	23	480	-25	2500
8	123	480	43.8	7656.25002
9	4	780	60	14400
10	14	960	-16.2	1056.25
11	24	360	-70	19600
12	124	390	13.8	756.25
13	34	1280	92.5	34225
14	134	1160	-28.7	3306.25
15	234	465	-112.5	50625.0001
16	1234	435	16.3	1056.25
			TOTAL =	1480625

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-9. RANKED STANDARDIZED MAGNITUDE OF EFFECTS LIFE TIME OF DROPLET (2 MM DIA) CONTAMINATION ON LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	562.5	96.67	8.04	98.33
14	3	120	90	1.71	95
13	234	112.5	83.33	1.61	91.67
12	34	92.5	76.67	1.32	88.33
11	24	70	70	1	85
10	13	61.2	63.33	.87	81.67
9	4	60	56.67	.86	78.33
8	123	43.8	50	.63	75
7	1	31.3	43.33	.45	71.67
6	134	28.7	36.67	.41	68.33
5	12	28.7	30	.41	65
4	23	25	23.33	.36	61.67
3	1234	16.3	16.67	.23	58.33
2	14	16.2	10	.23	55
1	124	13.8	3.33	.2	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIF

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

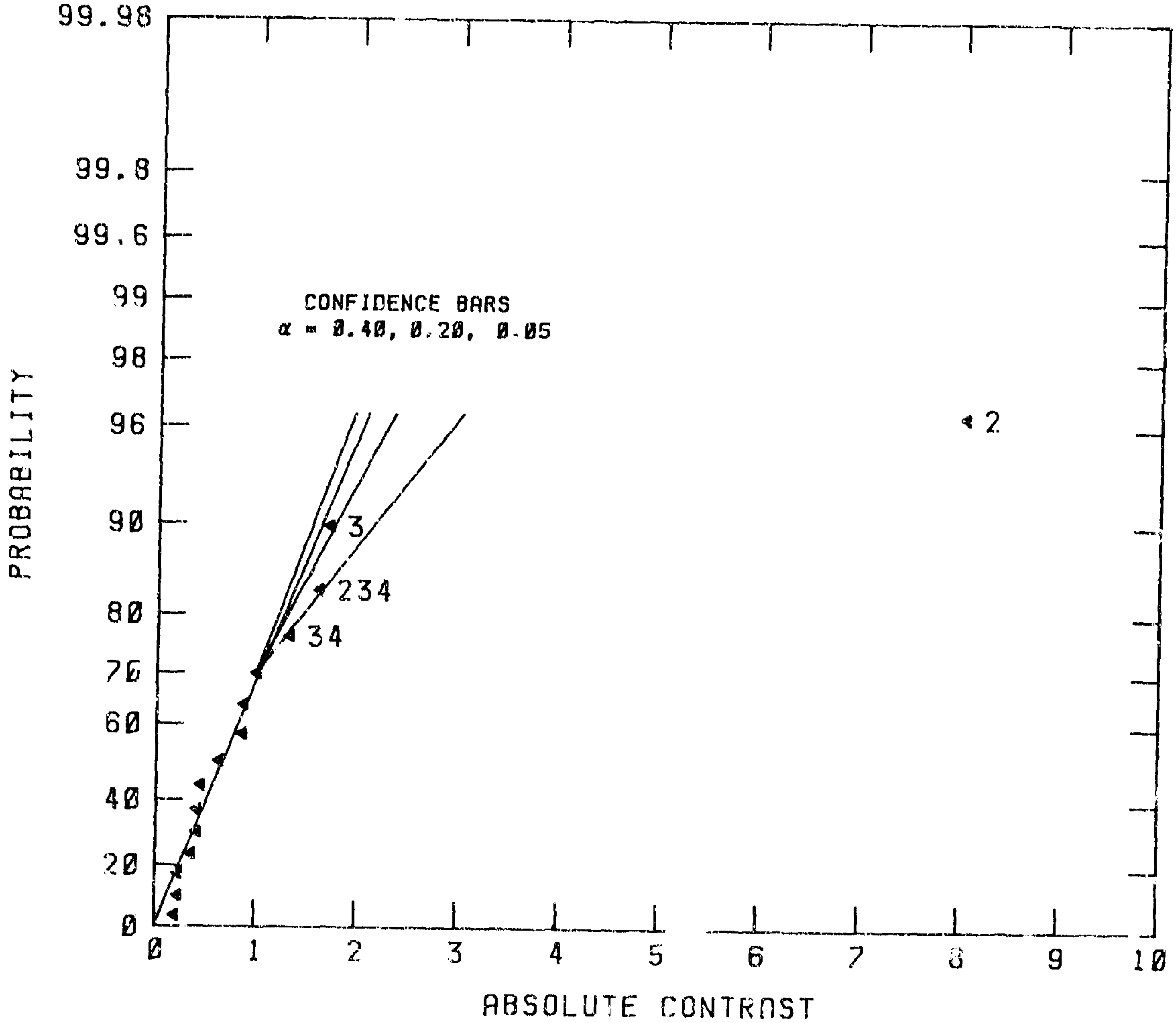

FIGURE K-4. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT LIFE TIME OF 2 MM DIA DROPLETS DEPOSITED ON LEAF SURFACE AT 80 DEG F AND 42% RH

TABLE K-10. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) OVER LIFE TIME OF DROPLET (2 MM DIA) CONTAMINATION ON LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	5	9	-
2	1	5	1	4
3	2	13	8	256
4	12	16	.5	1
5	3	5	-1.7	12.25
6	13	5	-.2	.25
7	23	11	-1.2	6.25
8	123	12	-.2	.25
9	4	5	0	0
10	14	6	0	0
11	24	14	0	0
12	124	15	-.5	1
13	34	4	-.2	.25
14	134	5	.3	.25
15	234	11	.3	.25
16	1234	12	.3	.25
			TOTAL =	282

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-11. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) OVER LIFE TIME OF DROPLET (2 MM DIA) CONTAMINATION ON LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	8	96.67	16	98.33
14	3	1.7	90	3.4	95
13	23	1.2	83.33	2.4	91.67
12	1	1	76.67	2	88.33
11	124	.5	70	1	85
10	12	.5	63.33	1	81.67
9	1234	.3	56.67	.6	78.33
8	234	.3	50	.6	75
7	134	.3	43.33	.6	71.67
6	34	.2	36.67	.4	68.33
5	123	.2	30	.4	65
4	13	.2	23.33	.4	61.67
3	24	0	16.67	0	58.33
2	14	0	10	0	55
1	4	0	3.33	0	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

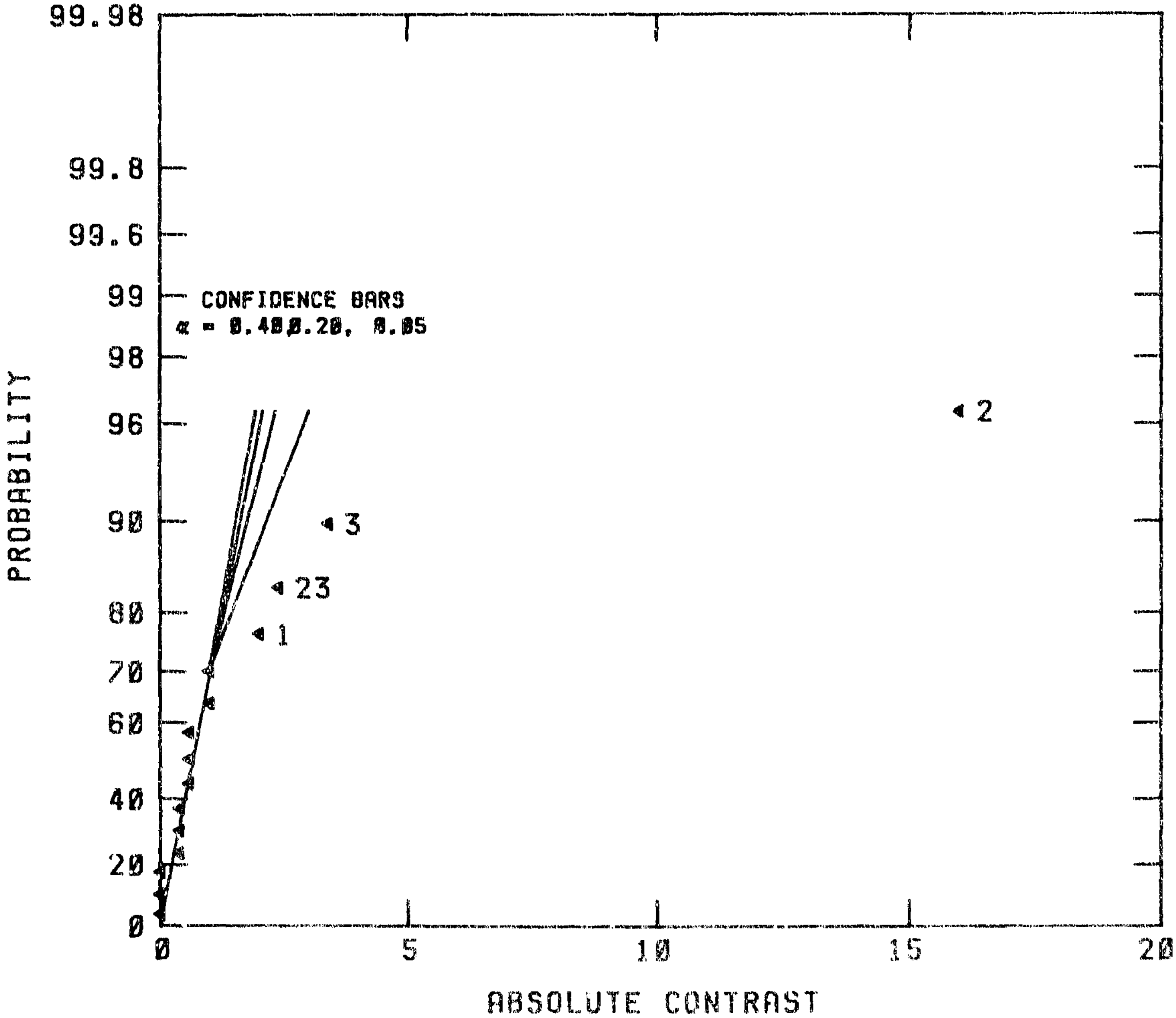

FIGURE K-5. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT
AVERAGE EVAPORATON RATE FOR 2 MM DIA DROPLETS
DEPOSITED ON LEAF SURFACE AT 60 DEG F AND 42% RH

TABLE K-12. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 1 HR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	16	19.9	-
2	1	14	-3	36
3	2	39	14.5	841
4	12	33	-1.2	6.25
5	3	12	-7.2	210.25
6	13	11	2	16
7	23	23	-3	36
8	123	22	1.3	6.25
9	4	16	-2.7	30.25
10	14	13	-.5	1
11	24	33	-1.5	9
12	124	24	-.2	.25
13	34	10	1.3	6.25
14	134	9	.5	1
15	234	22	2	16
16	1234	21	.3	.25

TOTAL = 1215.75

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-13. RANKED STANDARDIZED MAGNITUDE OF EFFECTS PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 1 HR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	14.5	96.67	5.37	98.33
14	3	7.2	90	2.67	95
13	23	3	83.33	1.11	91.67
12	1	3	76.67	1.11	88.33
11	4	2.7	70	1	85
10	234	2	63.33	.74	81.67
9	13	2	56.67	.74	78.33
8	24	1.5	50	.56	75
7	34	1.3	43.33	.48	71.67
6	123	1.3	36.67	.48	68.33
5	12	1.2	30	.44	65
4	134	.5	23.33	.19	61.67
3	14	.5	16.67	.19	58.33
2	1234	.3	10	.11	55
1	124	.2	3.33	.07	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

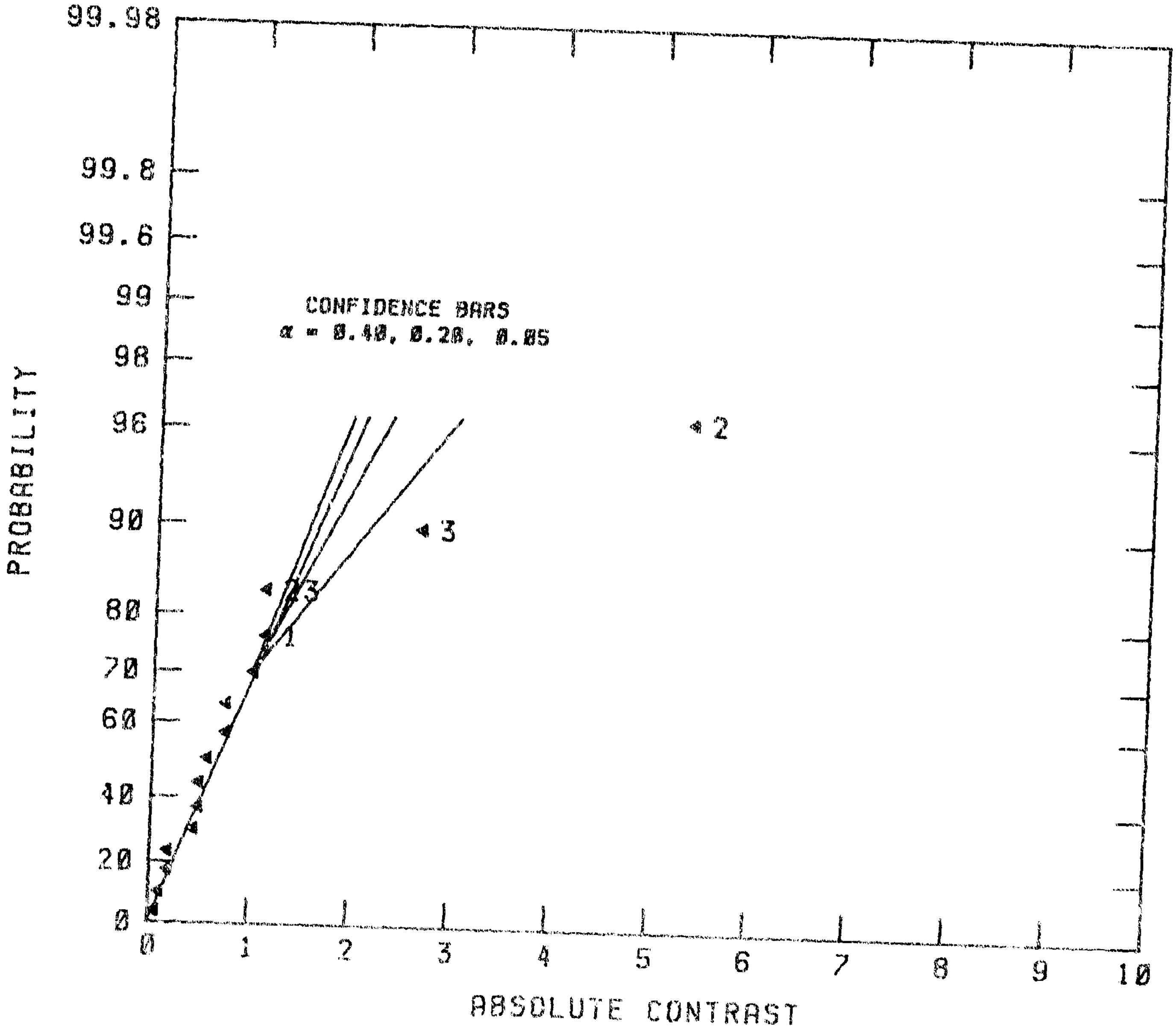

FIGURE K-6. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT PERCENT OF CONTAMINATION RECOVERED AS VAPOR AFTER 1 HR FROM 2 MM DIA DROPS ON LEAF SURFACE AT 80 DEG F AND 42% RH

TABLE K-14. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 2 HR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	29	35.9	-
2	1	27	-4	64
3	2	63	24.8	2450.25
4	12	58	-1.5	9
5	3	22	-11.2	506.25
6	13	21	2	16
7	23	42	-3.7	56.25
8	123	40	1	4
9	4	29	-3.7	56.25
10	14	24	-1.5	9
11	24	57	-1.2	6.25
12	124	45	-.5	1
13	34	19	1.8	12.25
14	134	17	1	4
15	234	42	2.8	30.25
16	1234	39	.5	1
			TOTAL =	3225.75

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-15. RANKED STANDARDIZED MAGNITUDE OF EFFECTS PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 2 HR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	24.8	96.67	6.7	98.33
14	3	11.2	90	3.03	95
13	1	4	83.33	1.08	91.67
12	4	3.7	76.67	1	88.33
11	23	3.7	70	1	85
10	234	2.8	63.33	.76	81.67
9	13	2	56.67	.54	78.33
8	34	1.8	50	.49	75
7	14	1.5	43.33	.41	71.67
6	12	1.5	36.67	.41	68.33
5	24	1.2	30	.32	65
4	134	1	23.33	.27	61.67
3	123	1	16.67	.27	58.33
2	1234	.5	10	.14	55
1	124	.5	3.33	.14	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100.)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

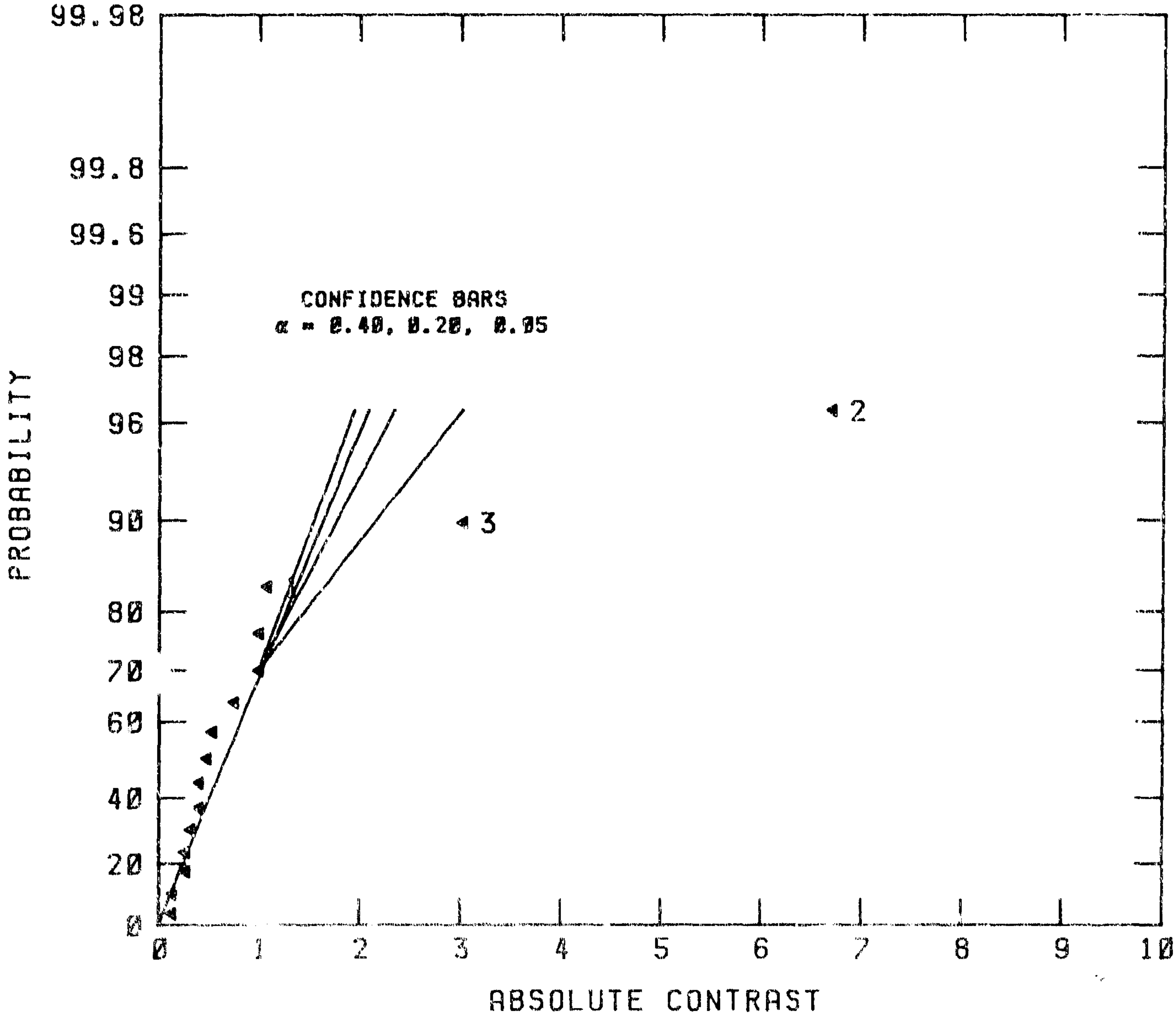

FIGURE K-7. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT PERCENT OF CONTAMINATION RECOVERED AS VAPOR AFTER 2 HR FROM 2 MM DIA DROPS ON LEAF SURFACE AT 80 DEG F AND 42% RH

TABLE K-16. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 3 HR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	40	48.5	--
2	1	37	-4.2	72.25
3	2	76	31.3	3906.25
4	12	75	-.5	1
5	3	32	-12.5	625
6	13	30	1.3	6.25
7	23	58	-2.7	30.25
8	123	56	.5	1
9	4	40	-4	64
10	14	34	-2.2	20.25
11	24	74	-.2	.25
12	124	62	-1	4
13	34	27	.5	1
14	134	23	1.3	6.25
15	234	58	2.8	30.25
16	1234	54	1	4

TOTAL = 4772

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-17. RANKED STANDARDIZED MAGNITUDE OF EFFECTS PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 3 HR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	31.3	96.67	11.18	98.33
14	3	12.5	90	4.46	95
13	1	4.2	83.33	1.5	91.67
12	4	4	76.67	1.43	88.33
11	234	2.8	70	1	85
10	23	2.7	63.33	.96	81.67
9	14	2.2	56.67	.79	78.33
8	134	1.3	50	.46	75
7	13	1.3	43.33	.46	71.67
6	1234	1	36.67	.36	68.33
5	124	1	30	.36	65
4	34	.5	23.33	.18	61.67
3	123	.5	16.67	.18	58.33
2	12	.5	10	.18	55
1	24	.2	3.33	.07	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

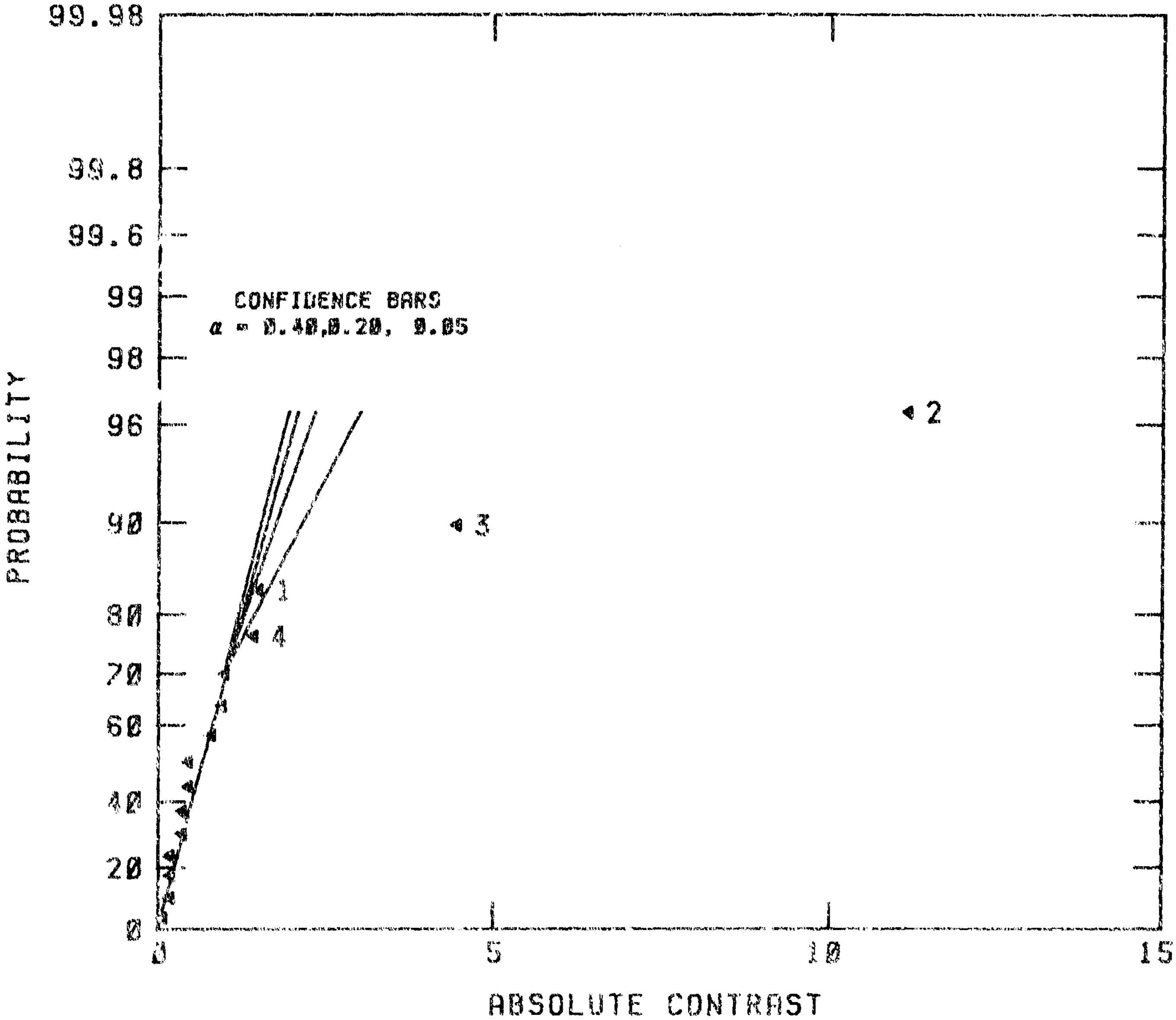

FIGURE K-8. HALF NORMAL PROBABILTIY PLOT OF FACTORIAL EXPERIMENT PERCENT OF CONTAMINATION RECOVERED AS VAPOR AFTER 3 HR FROM 2 MM DIA DROPS ON LEAF SURFACE AT 60 DEG F AND 42% RH

TABLE K-18. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 6 HR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	62	71.3	-
2	1	61	.1	.0625
3	2	84	30.6	3751.5625
4	12	94	2.6	27.5625
5	3	54	-7.6	232.5625
6	13	53	-1.1	5.0625
7	23	84	3.4	45.5625
8	123	85	-1.6	10.5625
9	4	64	-1.6	10.5625
10	14	59	-2.1	18.0625
11	24	88	1.4	7.5625
12	124	89	-.6	1.5625
13	34	49	-1.4	7.5625
14	134	46	1.1	5.0625
15	234	85	1.6	10.5625
16	1234	84	.6	1.5525
			TOTAL =	4135.4375

VARIABLE #'S AND IDENTITIES

1.	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-19. RANKED STANDARDIZED MAGNITUDE OF EFFECTS PERCENT OF DROPLET ([illegible] MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 6 HR FROM LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	24	30.6	96.67	14.57	98.33
14	3	7.6	90	3.62	95
13	23	3.4	83.33	1.62	91.67
12	12	2.6	76.67	1.24	88.33
11	14	2.1	70	1	85
10	234	1.6	63.33	.76	81.67
9	4	1.6	56.67	.76	78.33
8	123	1.6	50	.76	75
7	34	1.4	43.33	.67	71.67
6	24	1.4	36.67	.67	68.33
5	134	1.1	30	.52	65
4	13	1.1	23.33	.52	61.67
3	1234	.6	16.67	.29	58.33
2	124	.6	10	.29	55
1	1	.1	3.33	.05	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

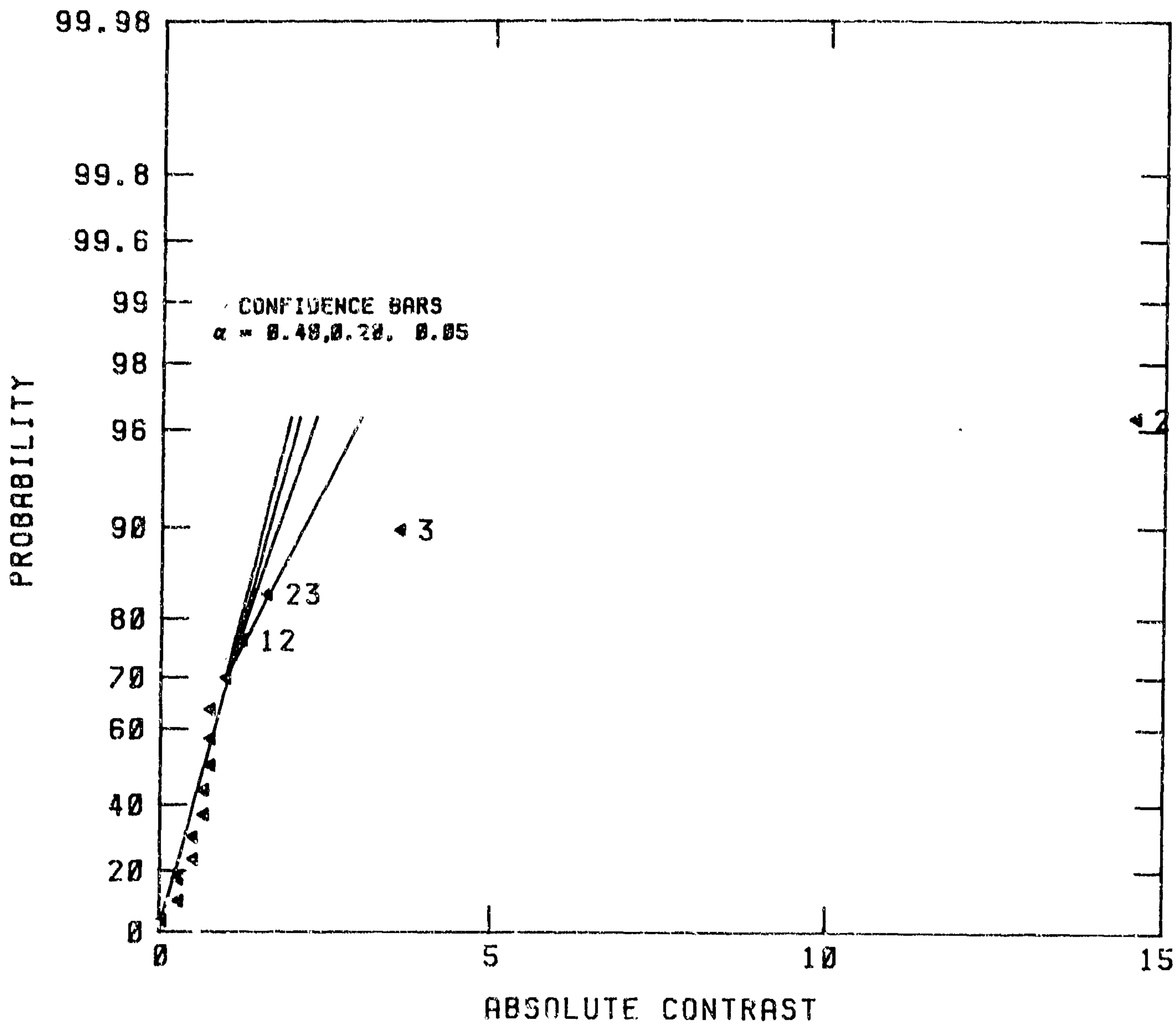

FIGURE K-9. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT PERCENT OF CONTAMINATION RECOVERED AS VAPOR AFTER 0 HR FROM 2 MM DIA DROPS ON LEAF SURFACE AT 80 DEG F AND 42% RH

TABLE K-20. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE FOR 1 HR AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	17	19.9	-
2	1	15	-.9	3.0625
3	2	36	14.9	885.0625
4	12	36	-.4	.5625
5	3	11	-7.4	217.5625
6	13	11	.9	3.0625
7	23	23	-2.4	22.5625
8	123	23	.4	.5625
9	4	14	-3.1	39.0625
10	14	14	-.4	.5625
11	24	31	-1.1	5.0625
12	124	26	-.9	3.0625
13	34	9	1.6	10.5625
14	134	9	.4	.5625
15	234	22	1.6	10.5625
16	1234	22	.9	3.0625

TOTAL = 1204.9375

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-21. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE FOR 1 HR AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	14.9	96.67	9.31	98.33
14	3	7.4	90	4.63	95
13	4	3.1	83.33	1.94	91.67
12	23	2.4	76.67	1.5	88.33
11	234	1.6	70	1	85
10	34	1.6	63.33	1	81.67
9	24	1.1	56.67	.69	78.33
8	1234	.9	50	.56	75
7	124	.9	43.33	.56	71.67
6	13	.9	36.67	.56	68.33
5	1	.9	30	.56	65
4	134	.4	23.33	.25	61.67
3	14	.4	16.67	.25	58.33
2	123	.4	10	.25	55
1	12	.4	3.33	.25	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

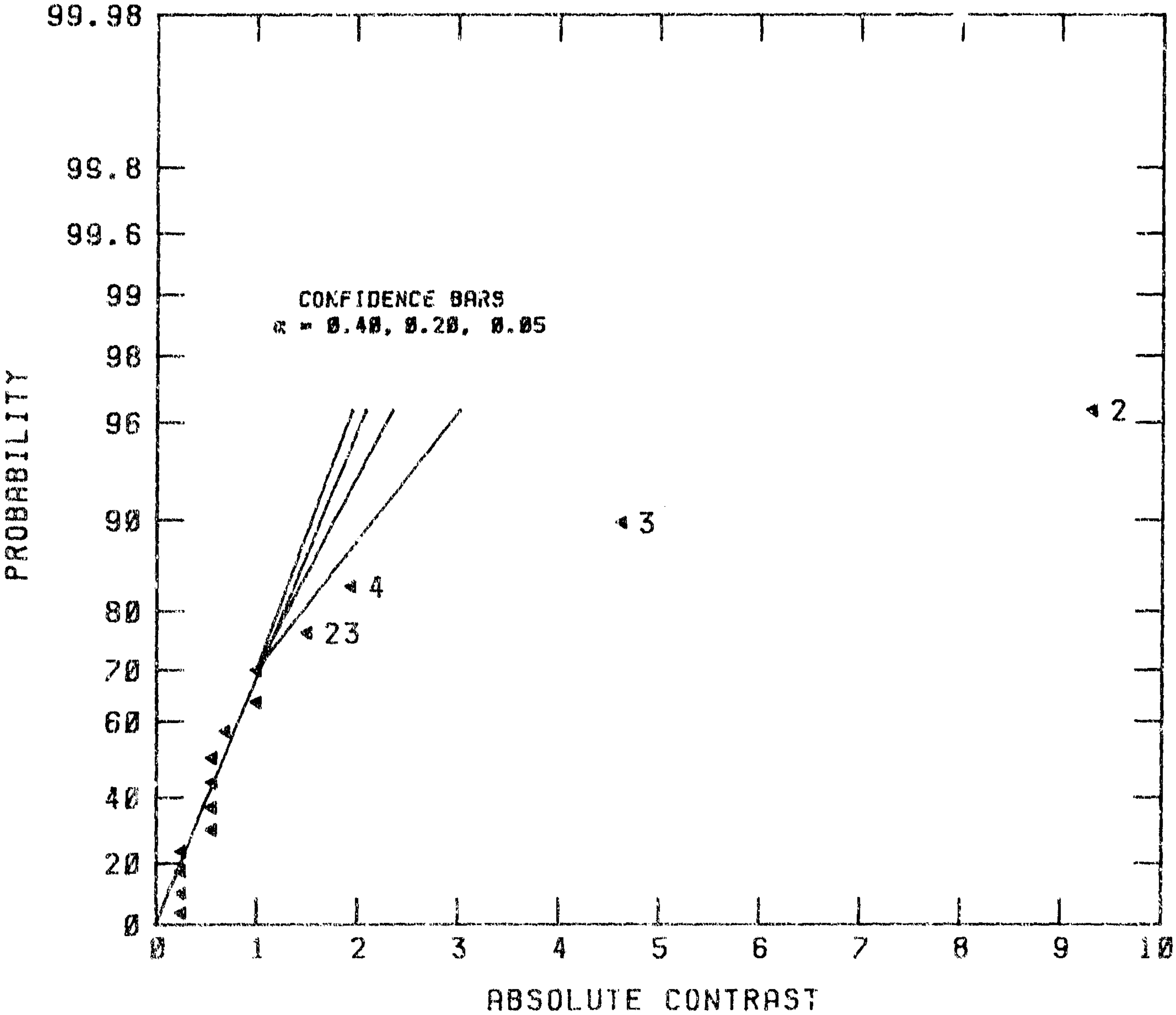

FIGURE K-10. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE OF 2MM DIA DROPS DEPOSITED ON LEAF SURFACE FOR 1 HR AT 80 DEG F AND 42% RH

TABLE K-22. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE FOR 2 HR AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	15	17.8	-
2	1	14	.1	.0625
3	2	29	12.9	663.0625
4	12	31	-.1	.0625
5	3	10	-5.6	126.5625
6	13	10	.4	.5625
7	23	21	-1.4	7.5625
8	123	22	.1	.0625
9	4	12	-2.4	22.5625
10	14	13	-.4	.5625
11	24	27	-.6	1.5625
12	124	24	-1.1	5.0625
13	34	8	.9	3.0625
14	134	9	.4	.5625
15	234	20	.6	1.5625
16	1234	20	.6	1.5625
			TOTAL =	834.4375

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-23. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE FOR 2 HR AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	12.9	96.67	11.73	98.33
14	3	5.6	90	5.09	95
13	4	2.4	83.33	2.18	91.67
12	23	1.4	76.67	1.27	88.33
11	124	1.1	70	1	85
10	34	.9	63.33	.82	81.67
9	1234	.6	56.67	.55	78.33
8	234	.6	50	.55	75
7	24	.6	43.33	.55	71.67
6	134	.4	36.67	.36	68.33
5	14	.4	30	.36	65
4	13	.4	23.33	.36	61.67
3	123	.1	16.67	.09	58.33
2	12	.1	10	.09	55
1	1	.1	3.33	.09	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

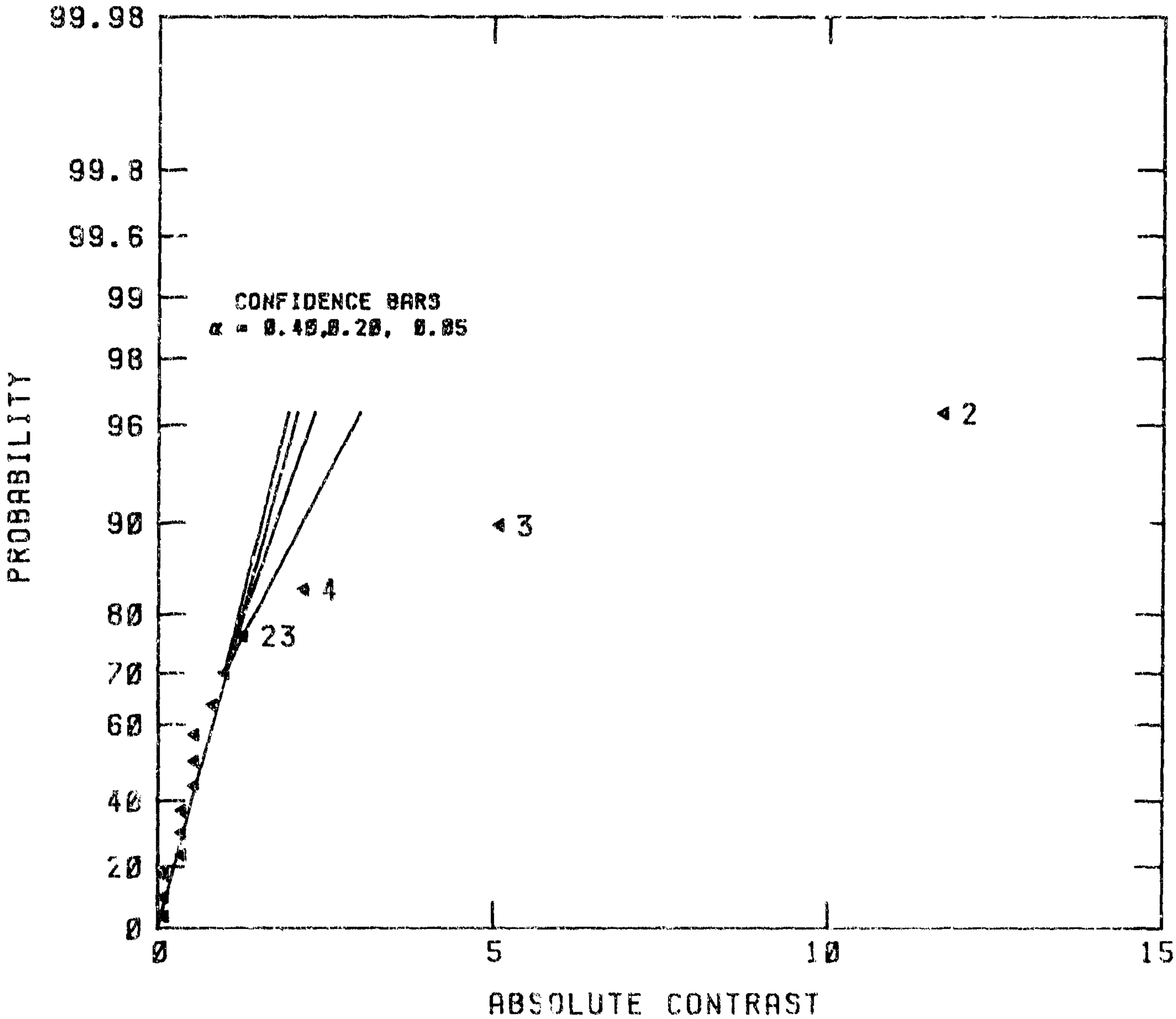

FIGURE K-11. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE OF 2 MM DIA DROPS DEPOSITED ON LEAF SURFACE FOR 2 HR AT 60 DEG F AND 42% RH

TABLE K-24. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE FOR 3 HR AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	14	16.2	-
2	1	13	.6	1.5625
3	2	23	10.6	451.5625
4	12	27	.4	.5625
5	3	10	-3.9	60.0625
6	13	10	-.1	.0625
7	23	20	-.6	1.5625
8	123	20	-.4	.5625
9	4	11	-1.9	14.0625
10	14	12	-.1	.0625
11	24	23	-.1	.0625
12	124	22	-.9	3.0625
13	34	8	.4	.5625
14	134	9	.6	1.5625
15	234	18	.1	.0625
16	1234	19	.9	3.0625
			TOTAL =	538.4375

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

TABLE K-25. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE FOR 3 HR AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	10.6	96.67	11.78	98.33
14	3	3.9	90	4.33	95
13	4	1.9	83.33	2.11	91.67
12	1234	.9	76.67	1	88.33
11	124	.9	70	1	85
10	134	.6	63.33	.67	81.67
9	23	.6	56.67	.67	78.33
8	1	.6	50	.67	75
7	34	.4	43.33	.44	71.67
6	123	.4	36.67	.44	68.33
5	12	.4	30	.44	65
4	234	.1	23.33	.11	61.67
3	24	.1	16.67	.11	58.33
2	14	.1	10	.11	55
1	13	.1	3.33	.11	51.67

PROB = ((R(I)-.5)/P(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OA	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

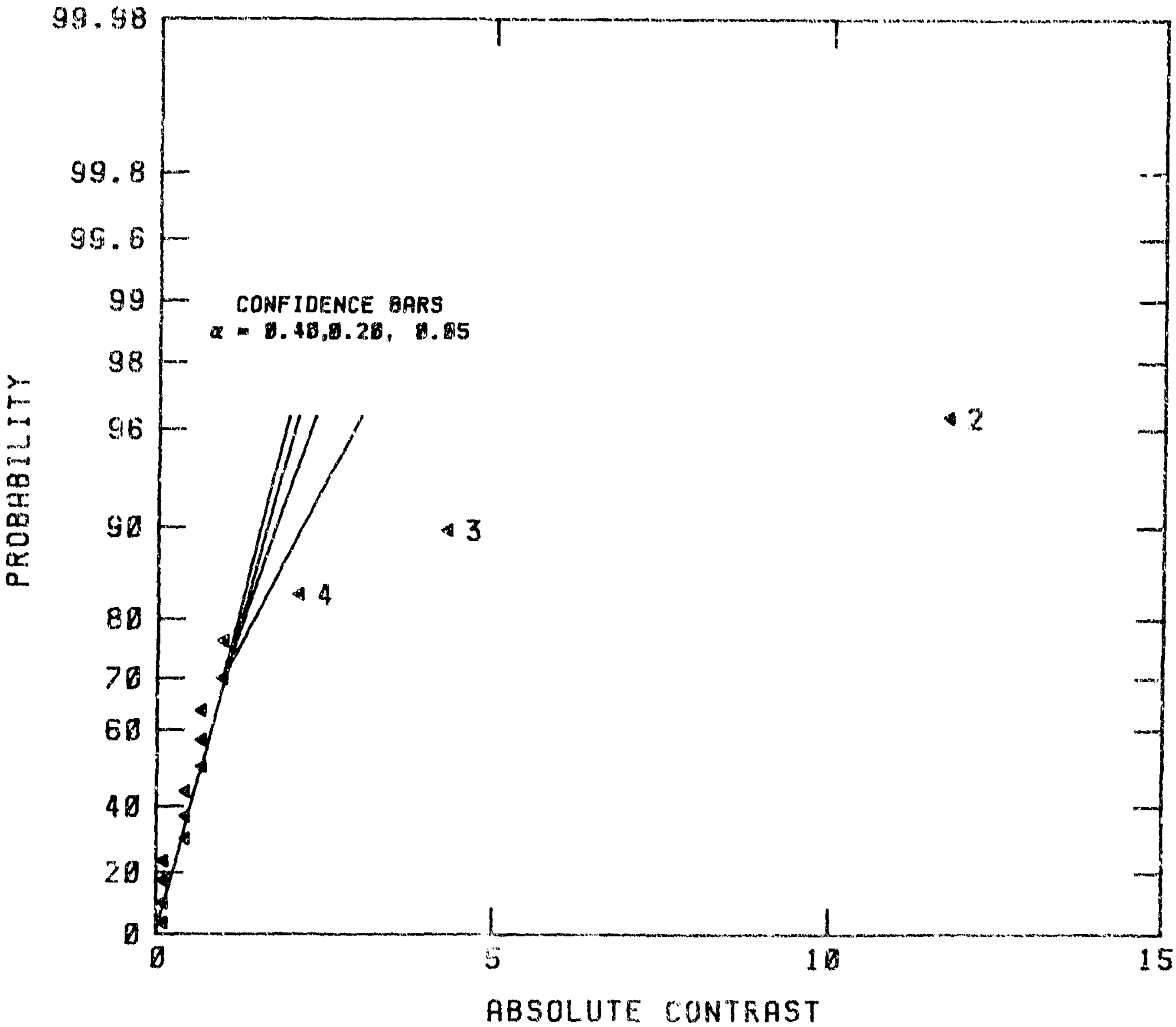

FIGURE K-12. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE OF 2 MM DROPS DEPOSITED ON LEAF SURFACE FOR 3 HR AT 60 DEG F AND 42% RH

TABLE K-26. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET DEPOSITED ON LEAF SURFACE FOR 6 HR AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	11	11.9	--
2	1	11	1.5	9
3	2	13	5.3	110.25
4	12	17	.5	1
5	3	8	-1.7	12.25
6	13	9	-.5	1
7	23	14	.8	2.25
8	123	15	-.5	1
9	4	9	-.7	2.25
10	14	11	0	0
11	24	14	.3	.25
12	124	16	-.5	1
13	34	7	-.2	.25
14	134	8	0	0
15	234	13	-.2	.25
16	1234	14	5	1
			TOTAL =	141.75

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	HICKORY

TABLE K-27. RANKED STANDARDIZED MAGNITUDE OF EFFECTS
AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET DEPOSITED
ON LEAF SURFACE FOR 6 HR AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	5.3	96.67	7.57	98.33
14	3	1.7	90	2.43	95
13	1	1.5	83.33	2.14	91.67
12	23	.8	76.67	1.14	88.33
11	4	.7	70	1	85
10	1234	.5	63.33	.71	81.67
9	124	.5	56.67	.71	78.33
8	123	.5	50	.71	75
7	13	.5	43.33	.71	71.67
6	12	.5	36.67	.71	68.33
5	24	.3	30	.43	65
4	234	.2	23.33	.29	61.67
3	34	.2	16.67	.29	58.33
2	134	0	10	0	55
1	14	0	3.33	0	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

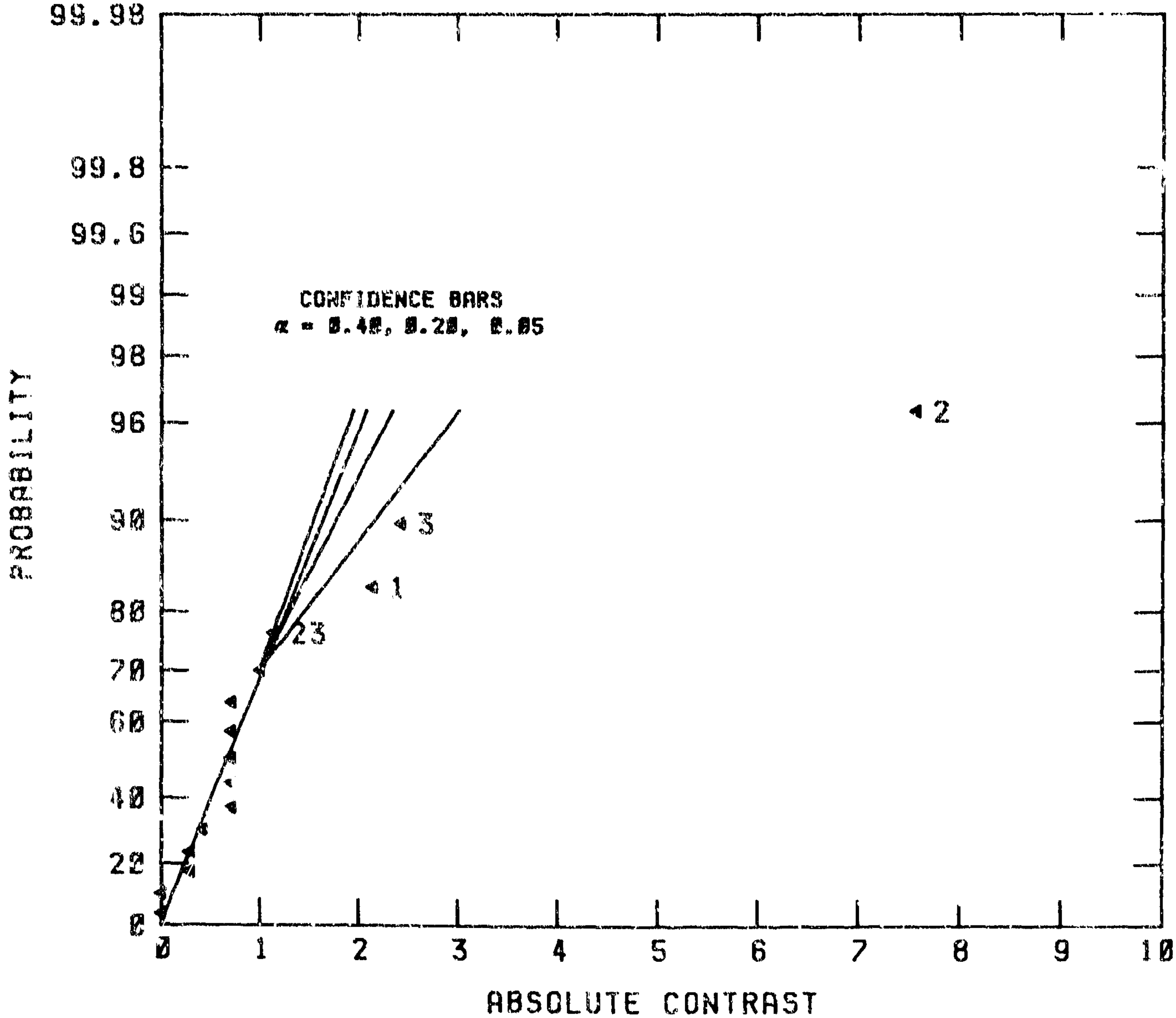

FIGURE K-13. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE OF 2 MM DIA DROPS DEPOSITED ON LEAF SURFACE FOR 6 HR AT 86 DEG F AND 42% RH

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APPENDIX L

FACTORIAL ANALYSIS AND HALF NORMAL PROBABILITY PLOTS OF STANDARDIZED ABSOLUTE CONTRASTS FOR TESTS ON GREEN AND RED OAK LEAVES

TABLE L-1. THE DESIGN MATRIX FOR THE 2^4 FACTORIAL EXPERIMENT NO. 2.

TEST	VARIABLES 1	2	3	4	CONTRAST CONFOUNDING
1	-	-	-	-	MEAN
2	+	-	-	-	1
3	-	+	-	-	2
4	+	+	-	-	12
5	-	-	+	-	3
6	+	-	+	-	13
7	-	+	+	-	23
8	+	+	+	-	123
9	-	-	-	+	4
10	+	-	-	+	14
11	-	+	-	+	24
12	+	+	-	+	124
13	-	-	+	+	34
14	+	-	+	+	134
15	-	+	+	+	234
16	+	+	+	+	1234

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-2. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES HALF-LIFE OF DROPLET (2 MM DIA) CONTAMINATION DEPOSITED ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	339	233.4	-
2	1	315	9.6	370.5625
3	2	142	-186.4	138942.563
4	12	137	2.4	22.5625
5	3	341	41.6	6930.56252
6	13	315	-2.6	27.5625
7	23	145	-18.6	1387.5625
8	123	150	-.9	3.0625
9	4	245	-4.1	68.0625
10	14	287	22.1	1958.0625
11	24	100	-2.4	22.5625
12	124	136	-10.1	410.0625
13	34	367	37.1	5513.0625
14	134	404	-4.6	85.5625
15	234	150	-22.1	1958.0625
16	1234	162	-3.9	60.0625
			TOTAL =	157759.938

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-3. RANKED STANDARDIZED MAGNITUDE OF EFFECTS HALF-LIFE OF DROPLET (2 MM DIA) CONTAMINATION DEPOSITED ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	185.4	96.67	8.43	98.33
14	3	41.6	90	1.88	95
13	34	37.1	83.33	1.68	91.67
12	234	22.1	76.67	1	88.33
11	14	22.1	70	1	85
10	23	18.6	63.33	.84	81.67
9	124	10.1	56.67	.46	78.33
8	1	9.6	50	.43	75
7	134	4.6	43.33	.21	71.67
6	4	4.1	36.67	.19	68.33
5	1234	3.9	30	.18	65
4	13	2.6	23.33	.12	61.67
3	24	2.4	16.67	.11	58.33
2	12	2.4	10	.11	55
1	123	.9	3.33	.04	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

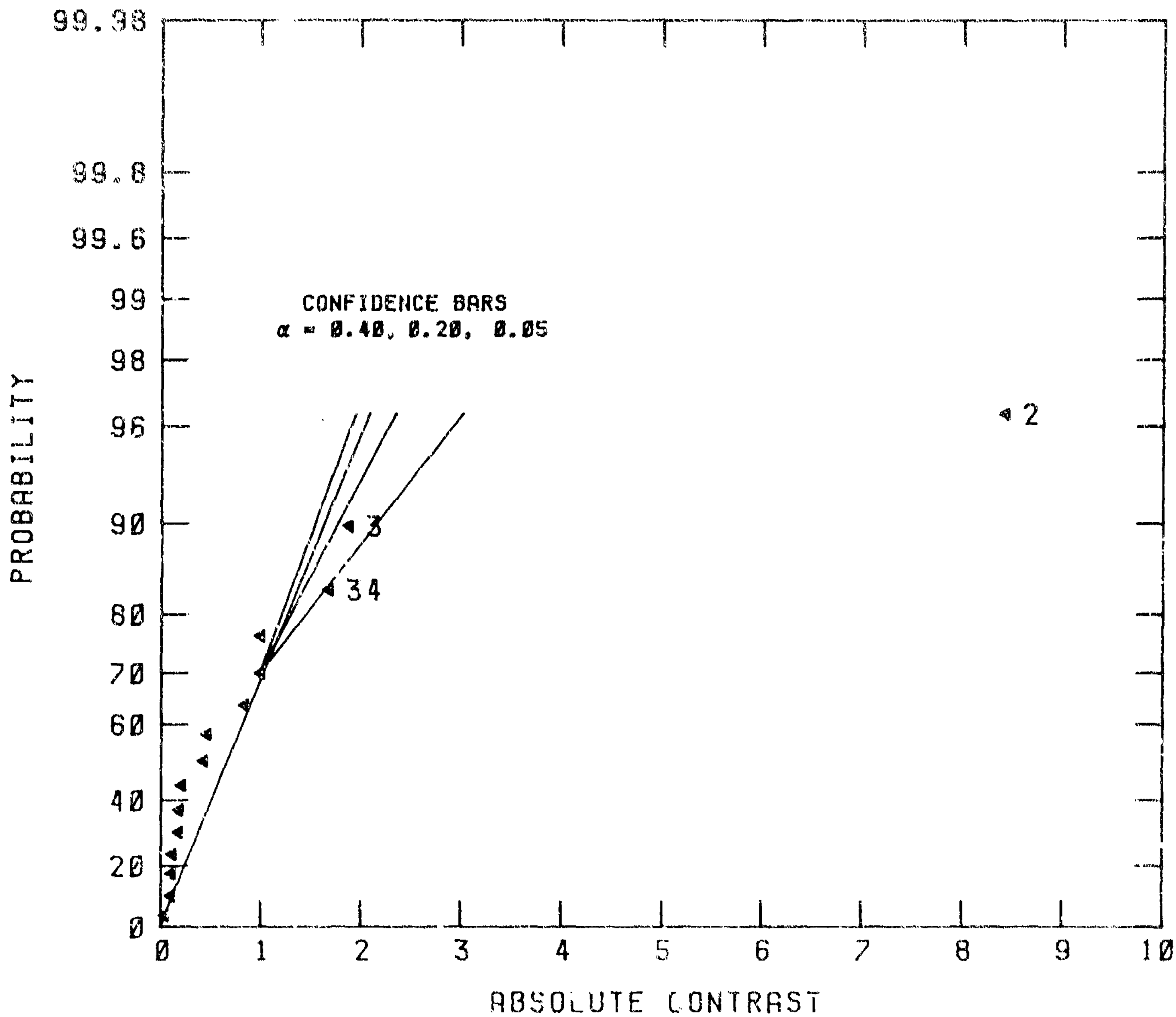

FIGURE L-1. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT HALF-LIFE OF 2 MM DIAMETER DROPS DEPOSITED ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TABLE L-4. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) OVER HALF-LIFE OF DROPLET (2 MM DIA) DEPOSITED ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	9	15.8	-
2	1	10	.5	1
3	2	22	13	576
4	12	24	-.5	1
5	3	9	-3	36
6	13	10	.5	1
7	23	20	-1.5	9
8	123	22	.5	1
9	4	10	0	0
10	14	11	-1	4
11	24	28	.5	1
12	124	24	-1	4
13	34	7	-2	16
14	134	8	.5	1
15	234	19	-.5	1
16	1234	19	.5	1
			TOTAL =	753

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-5. RANKED STANDARDIZED MAGNITUDE OF EFFECTS
AVERAGE EVAPORATION RATE (MMG/MIN) OVER HALF-LIFE OF
DROPLET (2 MM DIA) DEPOSITED ON OAK LEAF SURFACE AT
60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	13	96.67	13	98.33
14	3	3	90	3	95
13	34	2	83.33	2	91.67
12	23	1.5	76.67	1.5	88.33
11	124	1	70	1	85
10	14	1	63.33	1	81.67
9	1234	.5	56.67	.5	78.33
8	234	.5	50	.5	75
7	134	.5	43.33	.5	71.67
6	24	.5	36.67	.5	68.33
5	123	.5	30	.5	65
4	13	.5	23.33	.5	61.67
3	12	.5	16.67	.5	58.33
2	1	.5	10	.5	55
1	4	0	3.33	0	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

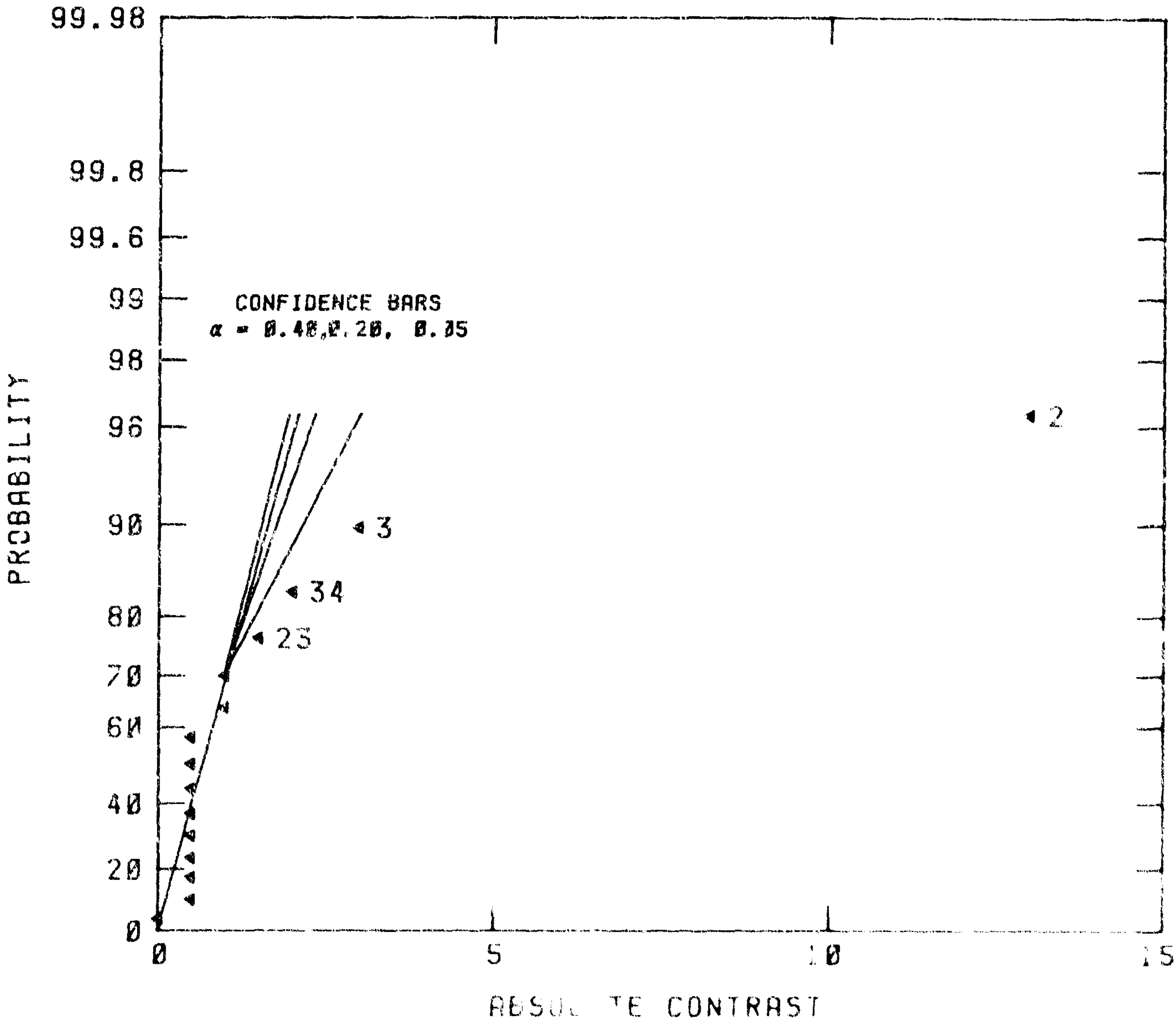

FIGURE L-2. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE OVER HALF-LIFE OF 2 MM DIA DROPS DEPOSITED ON OAK LEAF SURFACE AT 80 DEG F AND 42% RH

TABLE L-6. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES TOTAL PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR FROM OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	81	87.6	-
2	1	98	6.3	156.25
3	2	86	4.3	72.25
4	12	98	-1.2	6.25
5	3	83	-.5	1
6	13	93	-2	16
7	23	88	-.5	1
8	123	96	.5	1
9	4	80	-5.5	121
10	14	83	-5.5	121
11	24	88	1	4
12	124	89	.5	1
13	34	83	.3	.25
14	134	83	.8	2.25
15	234	87	-1.2	6.25
16	1234	86	-.2	.25
			TOTAL =	509.75

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-7. RANKED STANDARDIZED MAGNITUDE OF EFFECTS TOTAL PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR FROM OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	1	6.3	96.67	3.15	98.33
14	14	5.5	90	2.75	95
13	4	5.5	83.33	2.75	91.67
12	2	4.3	76.67	2.15	88.33
11	13	2	70	1	85
10	234	1.2	63.33	.6	81.67
9	12	1.2	56.67	.6	78.33
8	24	1	50	.5	75
7	134	.8	43.33	.4	71.67
6	124	.5	36.67	.25	68.33
5	123	.5	30	.25	65
4	23	.5	23.33	.25	61.67
3	3	.5	16.67	.25	58.33
2	34	.3	10	.15	55
1	1234	.2	3.33	.1	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE θ'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

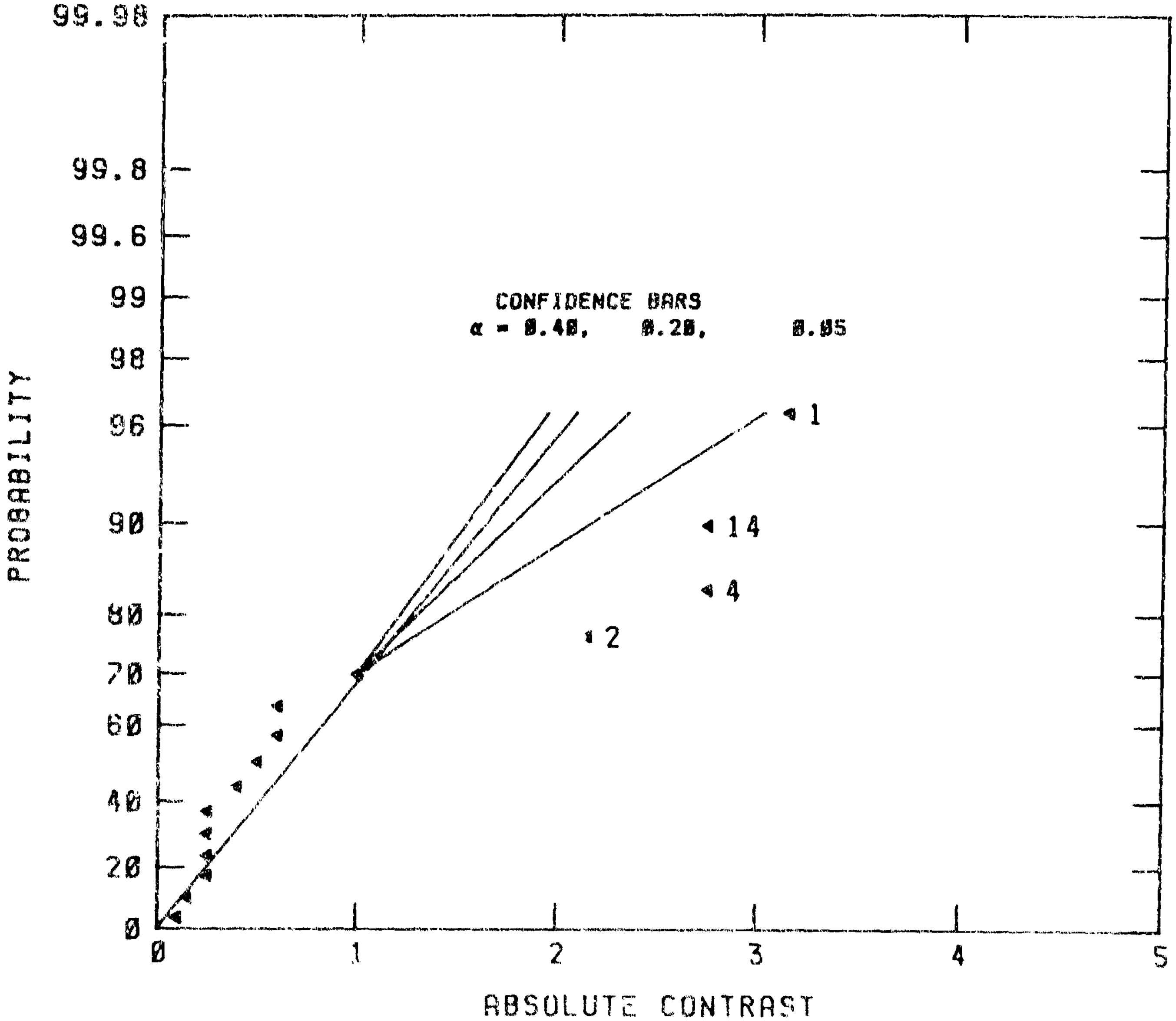

FIGURE L-3. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT TOTAL PERCENT OF CONTAMINATION RECOVERED AS VAPOR FROM 2 MM DIA DROPS ON OAK LEAVES AT 80 DEG F AND 42% RH

TABLE L-8. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES LIFE TIME OF DROPLET (2 MM DIA) CONTAMINATION ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	1215	794.1	-
2	1	1280	38.1	5814.0625
3	2	450	-675.6	1825876.56
4	12	560	-18.1	1314.0625
5	3	1140	89.4	31951.5625
6	13	1240	-58.1	13514.0625
7	23	510	-56.9	12939.0625
8	123	480	8.1	264.0625
9	4	780	-130.6	68251.5626
10	14	960	-23.1	2139.0625
11	24	360	43.1	7439.06252
12	124	390	3.1	39.0625
13	34	1280	123.1	60639.0626
14	134	1160	-31.9	4064.0625
15	234	465	-80.6	26001.5625
16	1234	435	51.9	10764.0625
			TOTAL =	2071010.94

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-9. RANKED STANDARDIZED MAGNITUDE OF EFFECTS LIFE TIME OF DROPLET (2 MM DIA) CONTAMINATION ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	675.6	96.67	8.38	98.33
14	4	130.6	90	1.62	95
13	34	123.1	83.33	1.53	91.67
12	3	89.4	76.67	1.11	88.33
11	234	80.6	70	1	85
10	13	58.1	63.33	.72	81.67
9	23	56.9	56.67	.71	78.33
8	1234	51.9	50	.64	75
7	24	43.1	43.33	.53	71.67
6	1	38.1	36.67	.47	68.33
5	134	31.9	30	.4	65
4	14	23.1	23.33	.29	61.67
3	12	18.1	16.67	.22	58.33
2	123	8.1	10	.1	55
1	124	3.1	3.33	.04	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

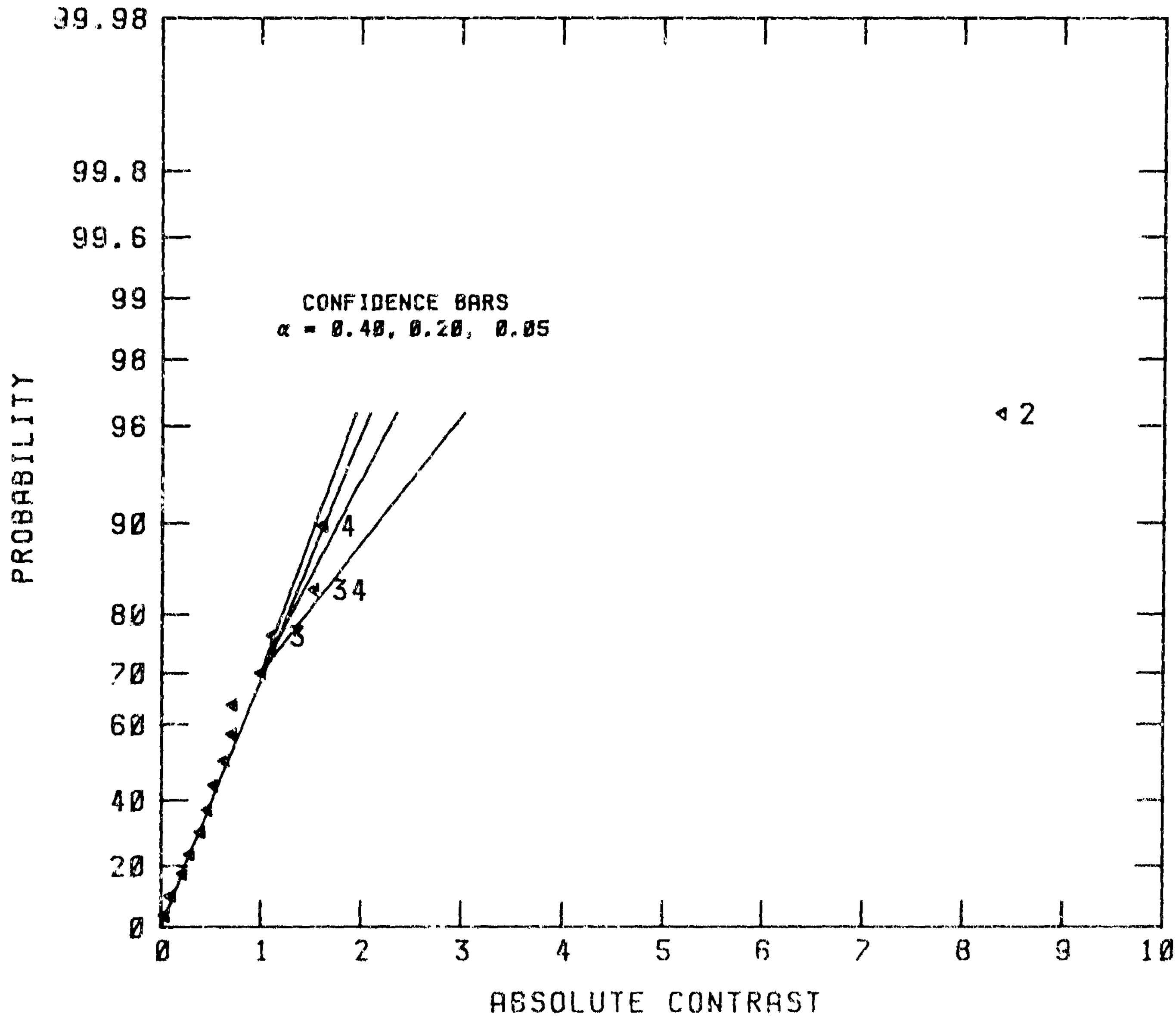

FIGURE L-4. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT LIFE TIME OF 2 MM DIA DROPLETS DEPOSITED ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TABLE L-10. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) OVER LIFE TIME OF DROPLET (2 MM DIA) CONTAMINATION ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	4	8.6	-
2	1	5	1.1	5.0625
3	2	12	7.6	232.5625
4	12	12	.1	.0625
5	3	4	-1.1	5.0625
6	13	5	.4	.5625
7	23	10	-.6	1.5625
8	123	13	.4	.5625
9	4	5	.9	3.0625
10	14	6	-.1	.0625
11	24	14	.4	.5625
12	124	15	-.1	.0625
13	34	4	-.9	3.0625
14	134	5	-.4	.5625
15	234	11	-.4	.5625
16	1234	12	-.4	.5625
			TOTAL =	253.9375

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-11. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) OVER LIFE TIME OF DROPLET (2 MM DIA) CONTAMINATION ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	7.6	96.67	8.44	98.33
14	3	1.1	90	1.22	95
13	1	1.1	83.33	1.22	91.67
12	34	.9	76.67	1	88.33
11	4	.9	70	1	85
10	23	.6	63.33	.67	81.67
9	1234	.4	56.67	.44	78.33
8	234	.4	50	.44	75
7	134	.4	43.33	.44	71.67
6	24	.4	36.67	.44	68.33
5	123	.4	30	.44	65
4	13	.4	23.33	.44	61.67
3	124	.1	16.67	.11	58.33
2	14	.1	10	.11	55
1	12	.1	3.33	.11	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

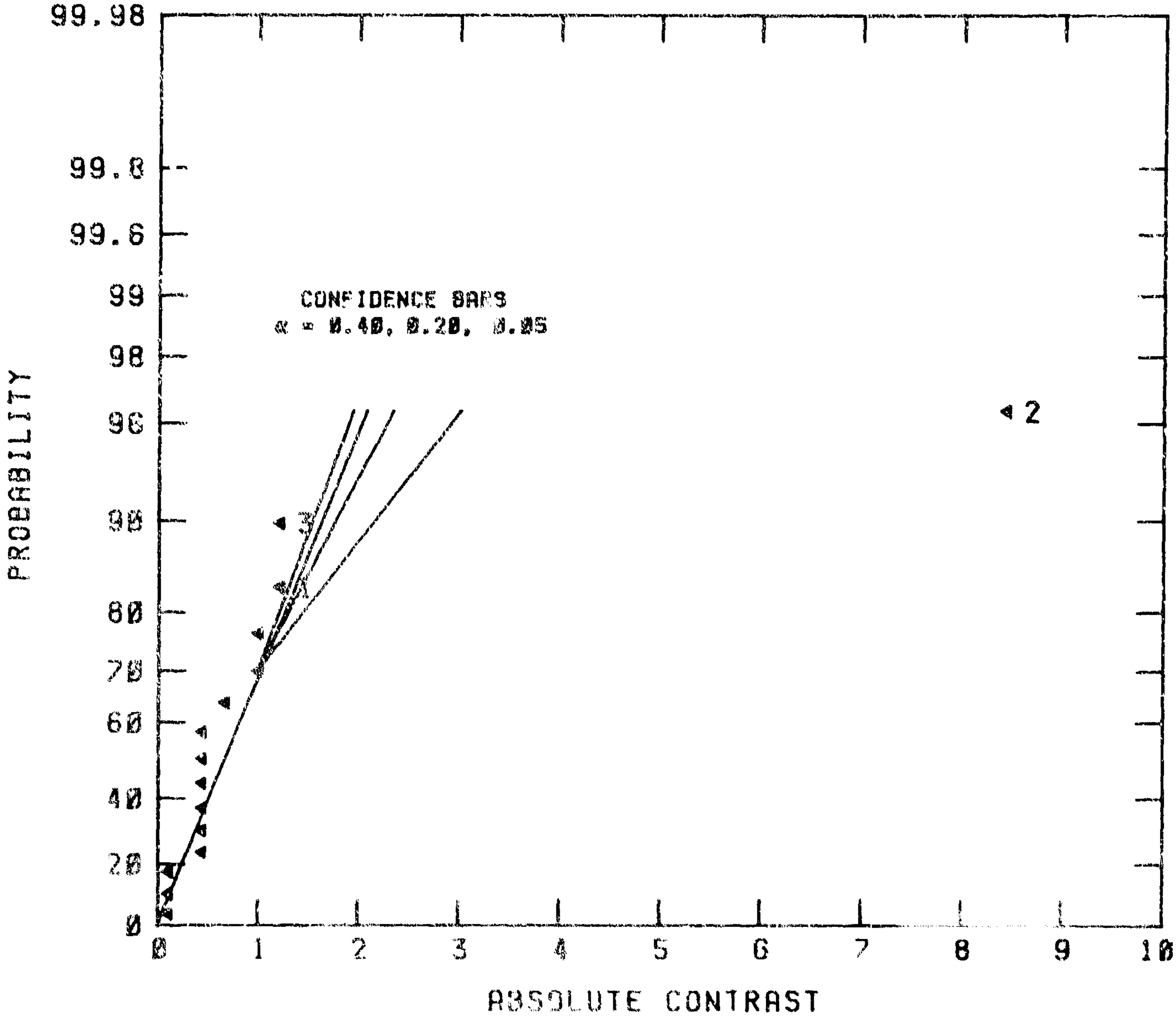

FIGURE L-5. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE FOR 2 MM DIA DROPLETS DEPOSITED ON OAK LEAVES AT 80 DEG F AND 42% RH

TABLE L-12. ESTIMATES OF AVERACE EFFECTS AND SUM OF SQUARES PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 1 HR FROM OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	10	17.7	-
2	1	11	-1.6	10.5625
3	2	14	12.9	663.0625
4	12	24	-1.1	5.0625
5	3	10	-3.4	45.5625
6	13	11	1.1	5.0625
7	23	23	-.9	3.0625
8	123	22	.6	1.5625
9	4	16	1.6	10.5625
10	14	13	-1.9	14.0625
11	24	33	.1	.0625
12	124	24	-.4	.5625
13	34	10	-2.6	27.5625
14	134	9	1.4	7.5625
15	234	22	-.1	.0625
16	1234	21	.9	3.0625

TOTAL = 757.4375

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)[illegible] CP
2:	WIND SPEED	(+)11 MPH	(-)[illegible] MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-13. RANKED STANDARDIZED MAGNITUDE OF EFFECTS PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 1 HR FROM OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	12.9	96.67	8.06	98.33
14	3	3.4	90	2.13	95
13	34	2.6	83.33	1.62	91.67
12	14	1.9	76.67	1.19	88.33
11	4	1.6	70	1	85
10	1	1.6	63.33	1	81.67
9	134	1.4	56.67	.88	78.33
8	13	1.1	50	.69	75
7	12	1.1	43.33	.69	71.67
6	1234	.9	36.67	.56	68.33
5	23	.9	30	.56	65
4	123	.6	23.33	.38	61.67
3	124	.4	16.67	.25	58.33
2	234	.1	10	.06	55
1	24	.1	3.33	.06	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

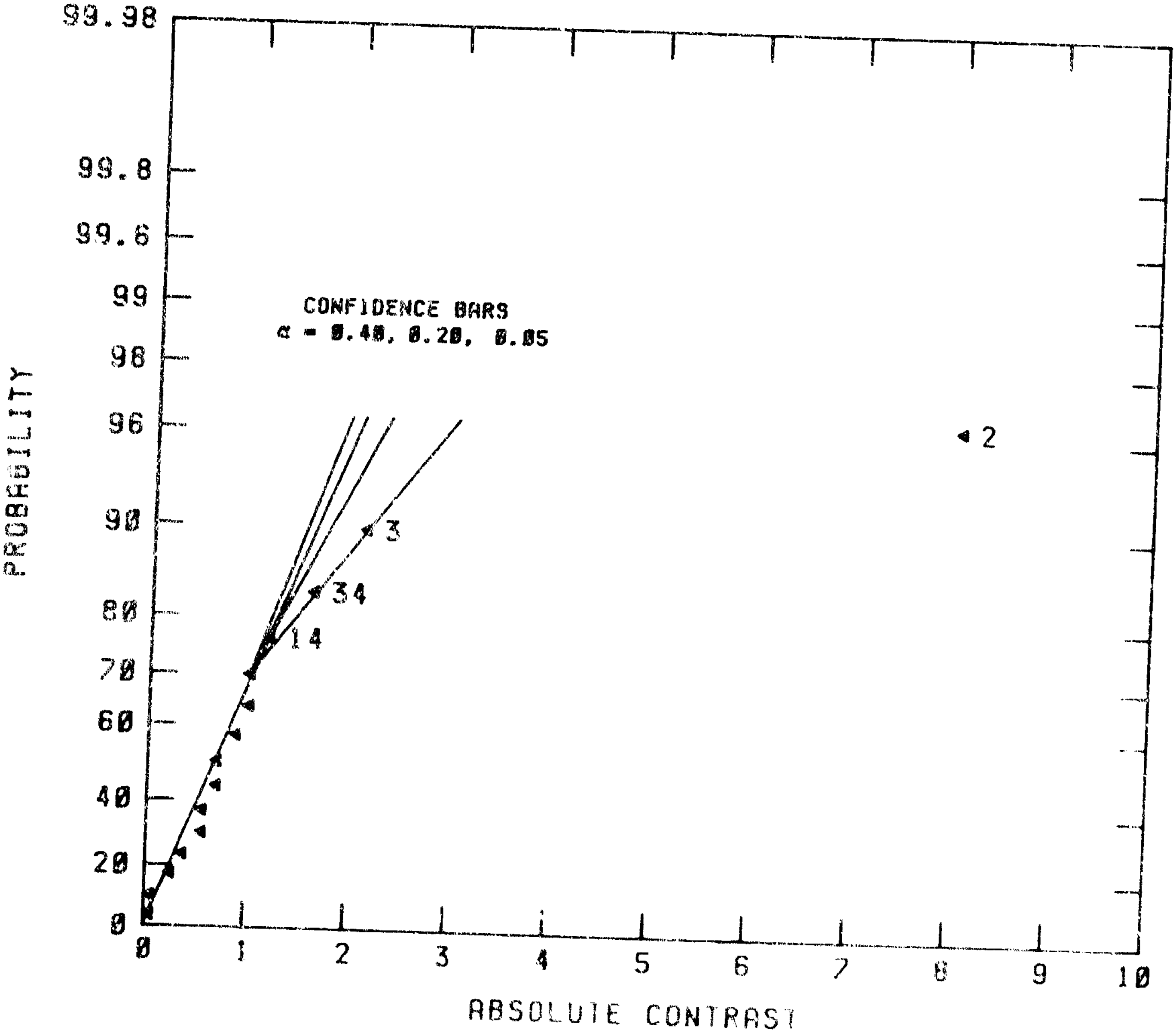

FIGURE L-6. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT PERCENT OF CONTAMINATION RECOVERED AS VAPOR AFTER 1 HR FROM 2 MM DIA DROPS ON OAK LEAVES AT 80 DEG F AND 42% RH

TABLE L-14. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 2 HR FROM OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	20	32.9	-
2	1	21	-2.7	30.25
3	2	44	23	2116
4	12	44	-1.5	9
5	3	20	-5.2	110.25
6	13	21	1.3	6.25
7	23	43	-1	4
8	123	41	.5	1
9	4	29	2.3	20.25
10	14	24	-2.7	30.25
11	24	57	.5	1
12	124	45	-.5	1
13	34	19	-4.2	72.25
14	134	17	1.8	12.25
15	[illegible]34	42	0	0
16	1234	39	1	4
			TOTAL =	2417.75

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-15. RANKED STANDARDIZED MAGNITUDE OF EFFECTS PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 2 HR FROM OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	23	96.67	8.52	98.33
14	3	5.2	90	1.93	95
13	34	4.2	83.33	1.56	91.67
12	14	2.7	76.67	1	88.33
11	1	2.7	70	1	85
10	4	2.3	63.33	.85	81.67
9	134	1.8	56.67	.67	78.33
8	12	1.5	50	.56	75
7	13	1.3	43.33	.48	71.67
6	1234	1	36.67	.37	68.33
5	23	1	30	.37	65
4	124	.5	23.33	.19	61.67
3	24	.5	16.67	.19	58.33
2	123	.5	10	.19	55
1	234	0	3.33	0	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

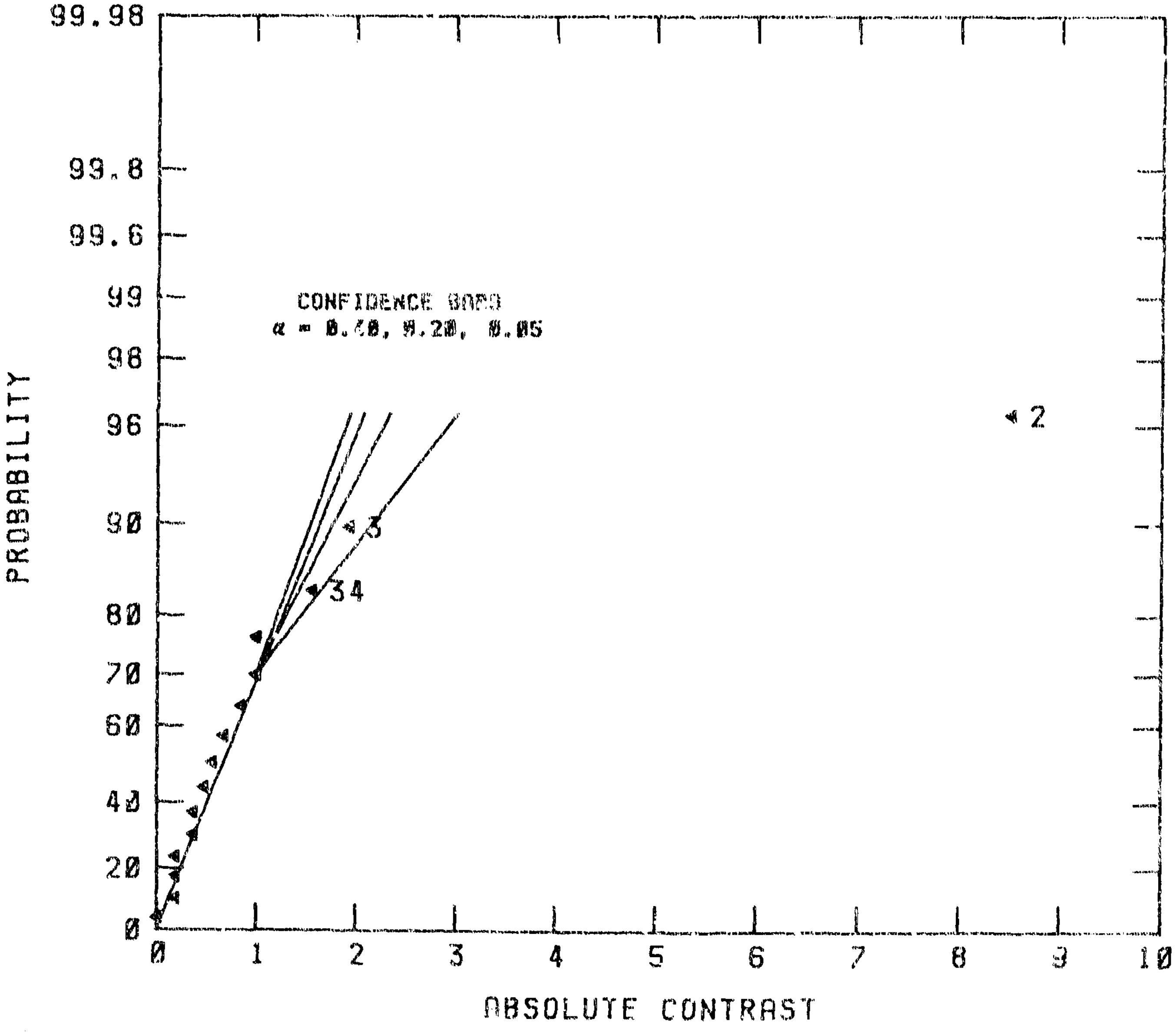

FIGURE L-7. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT PERCENT OF CONTAMINATION RECOVERED AS VAPOR AFTER [illegible] HR FROM 2 MM DIA DROPS ON OAK LEAVES AT 80 DEG F AND 52% RH

TABLE L-16. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 3 HR FROM OAK LEAF SURFACE AT 60 DEG F AND 43% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	29	45.6	-
2	1	31	-2.7	30.25
3	2	60	30.5	3721
4	12	62	-1	4
5	3	29	-6.7	182.25
6	13	30	.8	2.25
7	23	59	-.5	1
8	123	58	.5	1
9	4	40	1.8	12.25
10	14	34	-3.7	56.25
11	24	74	.5	1
12	124	62	-.5	1
13	34	27	-5.2	110.25
14	134	23	1.8	12.25
15	234	58	.5	1
16	1234	54	1	4

TOTAL = 4139.75

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFA[illegible]	(+)BOTTOM	(-)TOP
4:	LEAF COND[illegible]ON	(+)GREEN	(-)RED

TABLE L-17. RANKED STANDARDIZED MAGNITUDE OF EFFECTS PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 3 HR FROM OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	30.5	96.67	11.3	98.33
14	3	6.7	90	2.48	95
13	34	5.2	33.33	1.93	91.67
12	14	3.7	76.67	1.37	88.33
11	1	2.7	70	1	85
10	134	1.8	63.33	.67	81.67
9	4	1.8	56.67	.67	78.33
8	1234	1	50	.37	75
7	12	1	4[illegible].33	.37	71.67
6	13	.8	36.67	.3	68.33
5	234	.5	30	.19	65
4	124	.5	23.33	.19	61.67
3	24	.5	16.67	.19	58.33
2	123	.5	10	.19	55
1	23	.5	3.33	.19	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

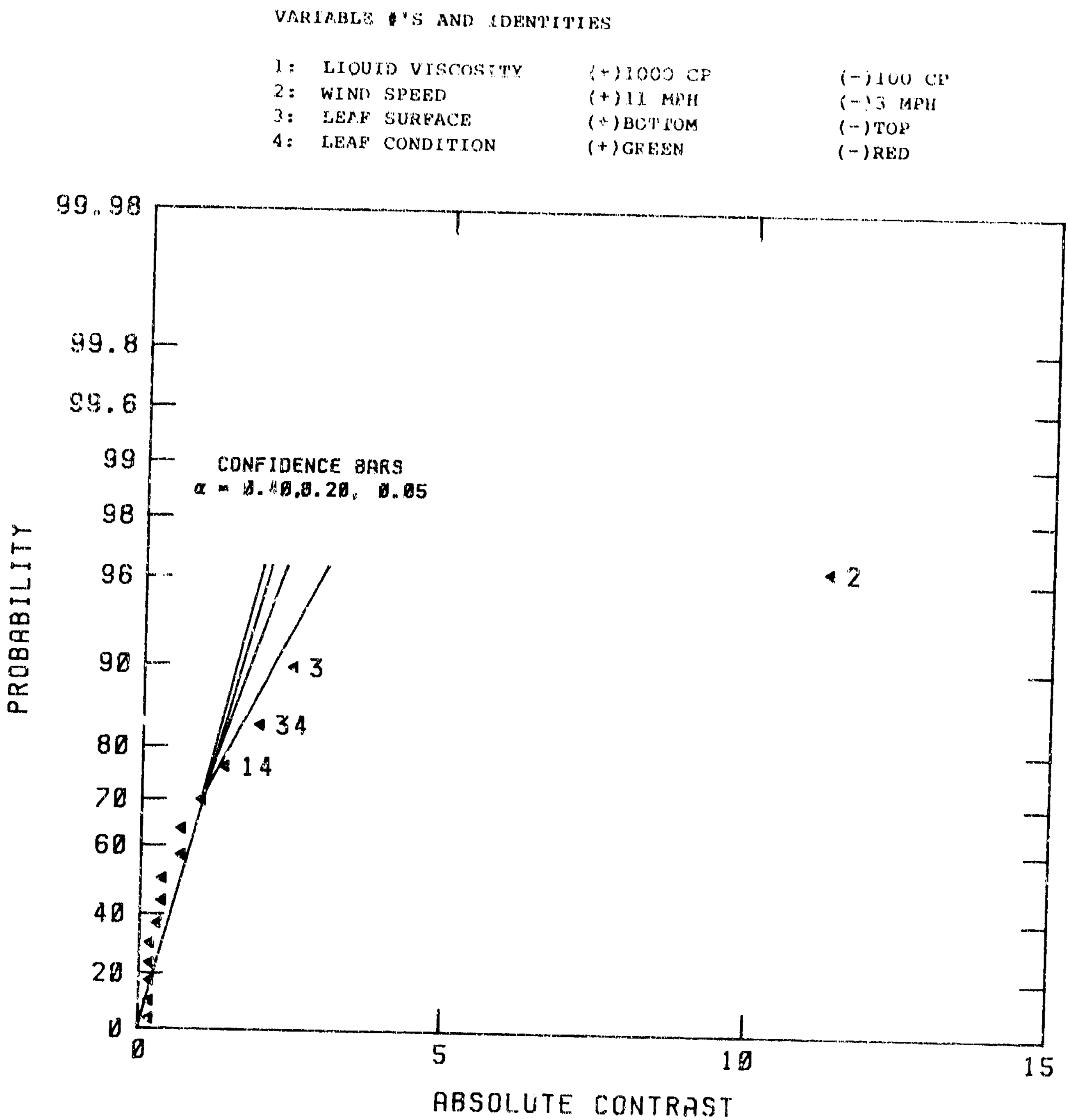

FIGURE L-8. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT PERCENT OF CONTAMINATION RECOVERED AS VAPOR AFTER 3 HR FROM 2 MM DIA DROPS ON OAK LEAVES AT 80 DEG F AND 42% RH

TABLE L-18. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 6 HR FROM OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	54	71.1	-
2	1	56	1.9	14.0625
3	2	85	33.1	4389.0625
4	12	94	2.4	22.5625
5	3	52	-5.1	105.0625
6	13	56	.1	.0625
7	23	84	2.4	22.5625
8	123	92	-.9	3.0625
9	4	64	-1.1	5.0625
10	14	59	-3.9	60.0625
11	24	88	-1.1	5.0625
12	124	89	-.4	.5625
13	34	49	-3.9	60.0625
14	134	46	-.1	.0625
15	234	85	2.6	27.5625
16	1234	84	-.1	.0625
			TOTAL =	4714.9375

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-19. RANKED STANDARDIZED MAGNITUDE OF EFFECTS PERCENT OF DROPLET (2 MM DIA) CONTAMINATION RECOVERED AS VAPOR AFTER 6 HR FROM OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	33.1	96.67	12.73	98.33
14	3	5.1	90	1.96	95
13	34	3.9	83.33	1.5	91.67
12	14	3.9	76.67	1.5	88.33
11	234	2.6	70	1	85
10	23	2.4	63.33	.92	81.67
9	12	2.4	56.67	.92	78.33
8	1	1.9	50	.73	75
7	24	1.1	43.33	.42	71.67
6	4	1.1	36.67	.42	68.33
5	123	.9	30	.35	65
4	124	.4	23.33	.15	61.67
3	1234	.1	16.67	.04	58.33
2	134	.1	10	.04	55
1	13	.1	3.33	.04	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

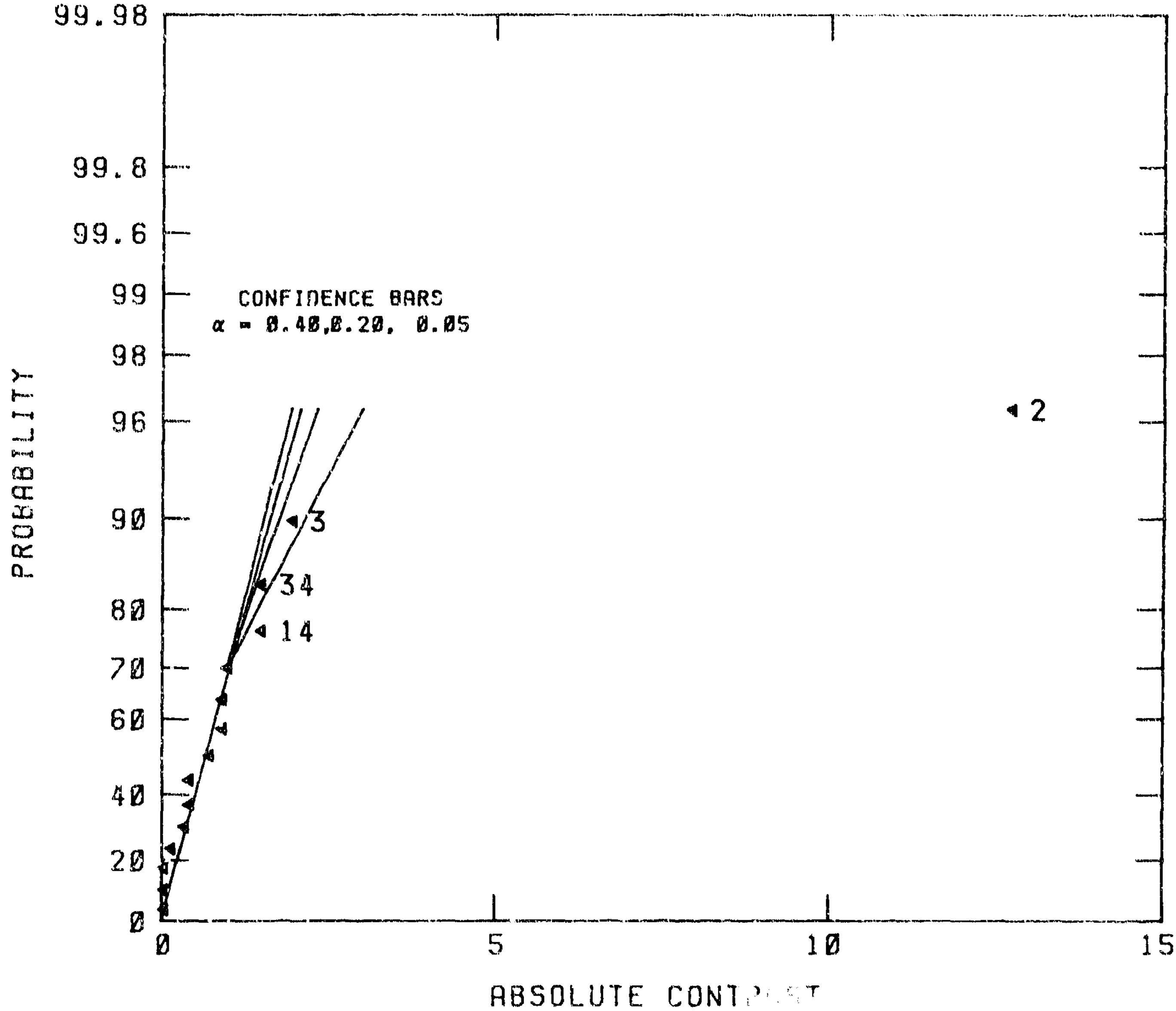

FIGURE L-9. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT PERCENT OF CONTAMINATION RECOVERED AS VAPOR AFTER 8 HR FROM 2 MM DIA DROPS ON OAK LEAVES AT 60 DEG F AND 42% RH

TABLE L-20. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON OAK LEAF SURFACE FOR 1 HR AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	11	18.1	-
2	1	12	-.1	.0625
3	2	25	13.4	715.5625
4	12	26	-.4	.5625
5	3	11	-3.6	52.5625
6	13	11	.6	1.5625
7	23	22	-.9	3.0625
8	123	24	.9	3.0625
9	4	14	.6	1.5625
10	14	14	-1.1	5.0625
11	24	31	.4	.5625
12	124	26	-.9	3.0625
13	34	9	-2.1	18.0625
14	134	9	.6	1.5625
15	234	22	.1	.0625
16	1234	22	.4	.5625
			TOTAL =	806.9375

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-21. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON OAK LEAF SURFACE FOR 1 HR AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	13.4	96.67	14.89	98.33
14	3	3.6	90	4	95
13	34	2.1	83.33	2.33	91.67
12	14	1.1	76.67	1.22	88.33
11	124	.9	70	1	85
10	123	.9	63.33	1	81.67
9	23	.9	56.67	1	78.33
8	134	.6	50	.67	75
7	4	.6	43.33	.67	71.67
6	13	.6	36.67	.67	68.33
5	1234	.4	30	.44	65
4	24	.4	23.33	.44	61.67
3	12	.4	16.67	.44	58.33
2	234	.1	10	.11	55
1	1	.1	3.33	.11	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

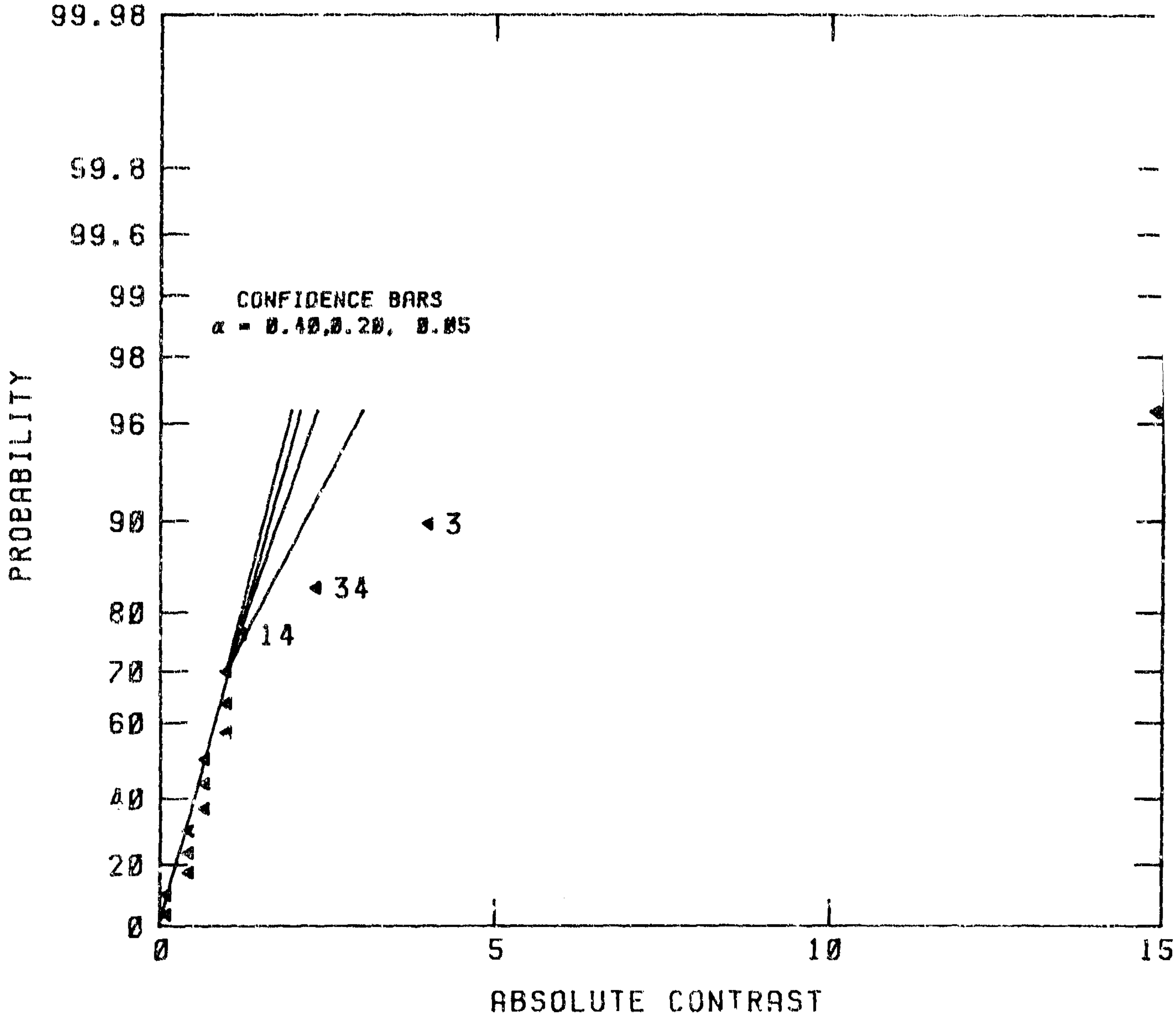

FIGURE L-10. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE OF 2MM DIA DROPS DEPOSITED ON OAK LEAVES FOR 1 HR AT 60 DEG F AND 42% RH

TABLE L-22. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON OAK LEAF SURFACE FOR 2 HR AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	10	16.7	-
2	1	11	.6	1.5625
3	2	23	12.4	612.5625
4	12	25	-.4	.5625
5	3	10	-2.9	33.0625
6	13	11	.4	.5625
7	23	21	-.9	3.0625
8	123	23	.4	.5625
9	4	12	-.1	.0625
10	14	13	-.9	3.0625
11	24	27	-.1	.0625
12	124	24	-.9	3.0625
13	34	8	-1.9	14.0625
14	134	9	.4	.5625
15	234	20	.1	.0625
16	1234	20	.4	.5625
			TOTAL =	673.4375

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-23. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED ON OAK LEAF SURFACE FOR 2 HR AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	12.4	96.67	13.78	98.33
14	3	2.9	90	3.22	95
13	34	1.9	83.33	2.11	91.67
12	124	.9	76.67	1	88.33
11	14	.9	70	1	85
10	23	.9	63.33	1	81.67
9	1	.6	56.67	.67	78.33
8	1234	.4	50	.44	75
7	134	.4	43.33	.44	71.67
6	123	.4	36.67	.44	68.33
5	13	.4	30	.44	65
4	12	.4	23.33	.44	61.67
3	234	.1	16.67	.11	58.33
2	24	.1	10	.11	55
1	4	.1	3.33	.11	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

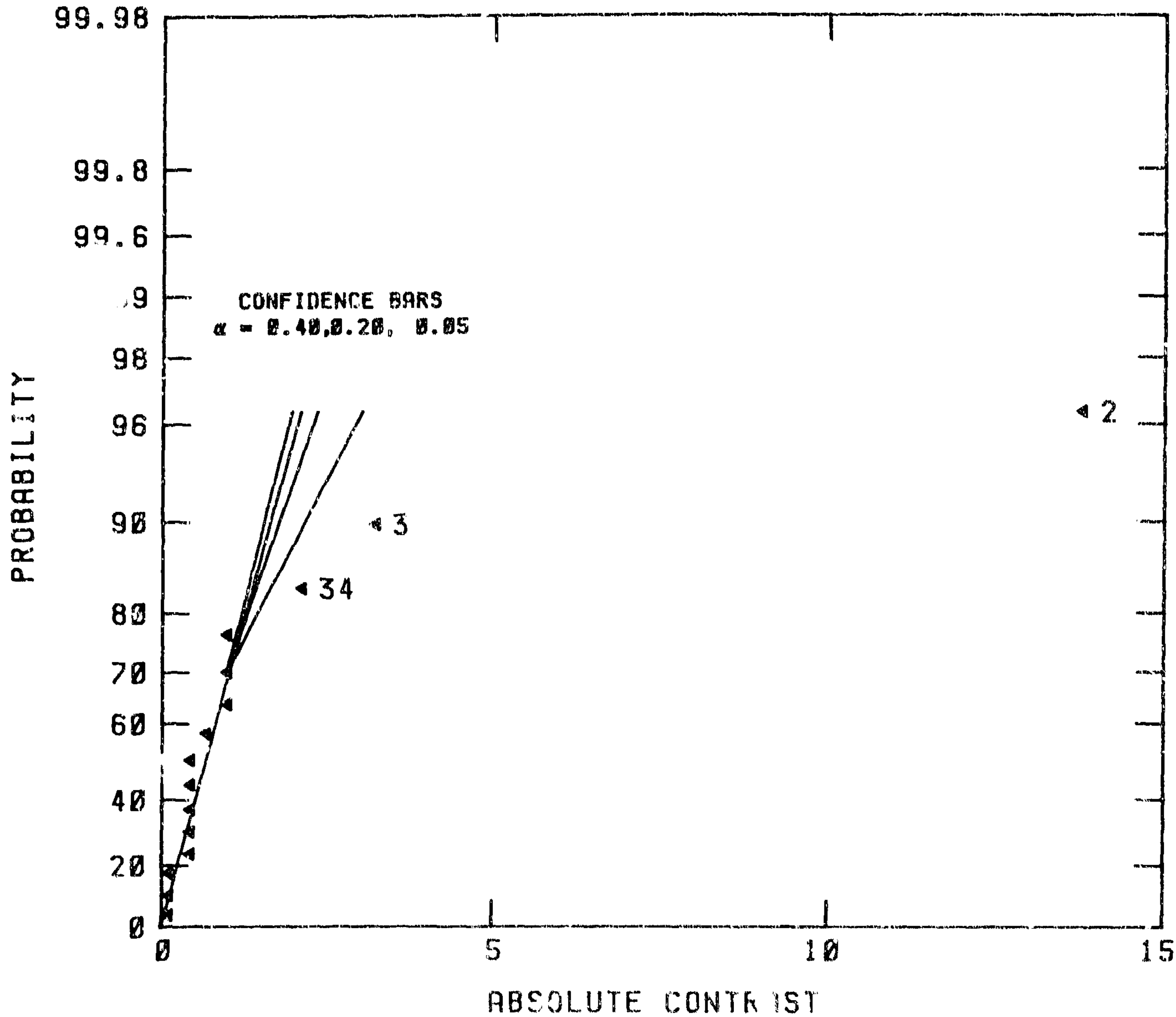

FIGURE L-11. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE OF 2 MM DIA DROPS DEPOSITED ON OAK LEAVES FOR 2 HR AT 80 DEG F AND 42% RH

TABLE L-24. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED FOR 3 HR ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	10	15.5	-
2	1	11	1	4
3	2	21	10.5	441
4	12	23	0	0
5	3	10	-2.2	20.25
6	13	11	.3	.25
7	23	19	-.7	2.25
8	123	21	.3	.25
9	4	11	-.5	1
10	14	12	-.5	1
11	24	23	0	0
12	124	22	-.5	1
13	34	8	-1.2	6.25
14	134	9	.3	.25
15	234	18	.3	.25
16	1234	19	.3	.25
			TOTAL =	478

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-25. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED FOR 3 HR ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	10.5	96.67	15	98.33
14	3	2.2	90	3.14	95
13	34	1.2	83.33	1.71	91.67
12	1	1	76.67	1.43	88.33
11	23	.7	70	1	85
10	124	.5	63.33	.71	81.67
9	14	.5	56.67	.71	78.33
8	4	.5	50	.71	75
7	1234	.3	43.33	.43	71.67
6	234	.3	36.67	.43	68.33
5	134	.3	30	43	65
4	123	.3	23.33	.43	61.67
3	13	.3	16.67	.43	58.33
2	24	0	10	0	55
1	12	0	3.33	0	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(−)100 CP
2:	WIND SPEED	(+)11 MPH	(−)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(−)TOP
4:	LEAF CONDITION	(+)GREEN	(−)RED

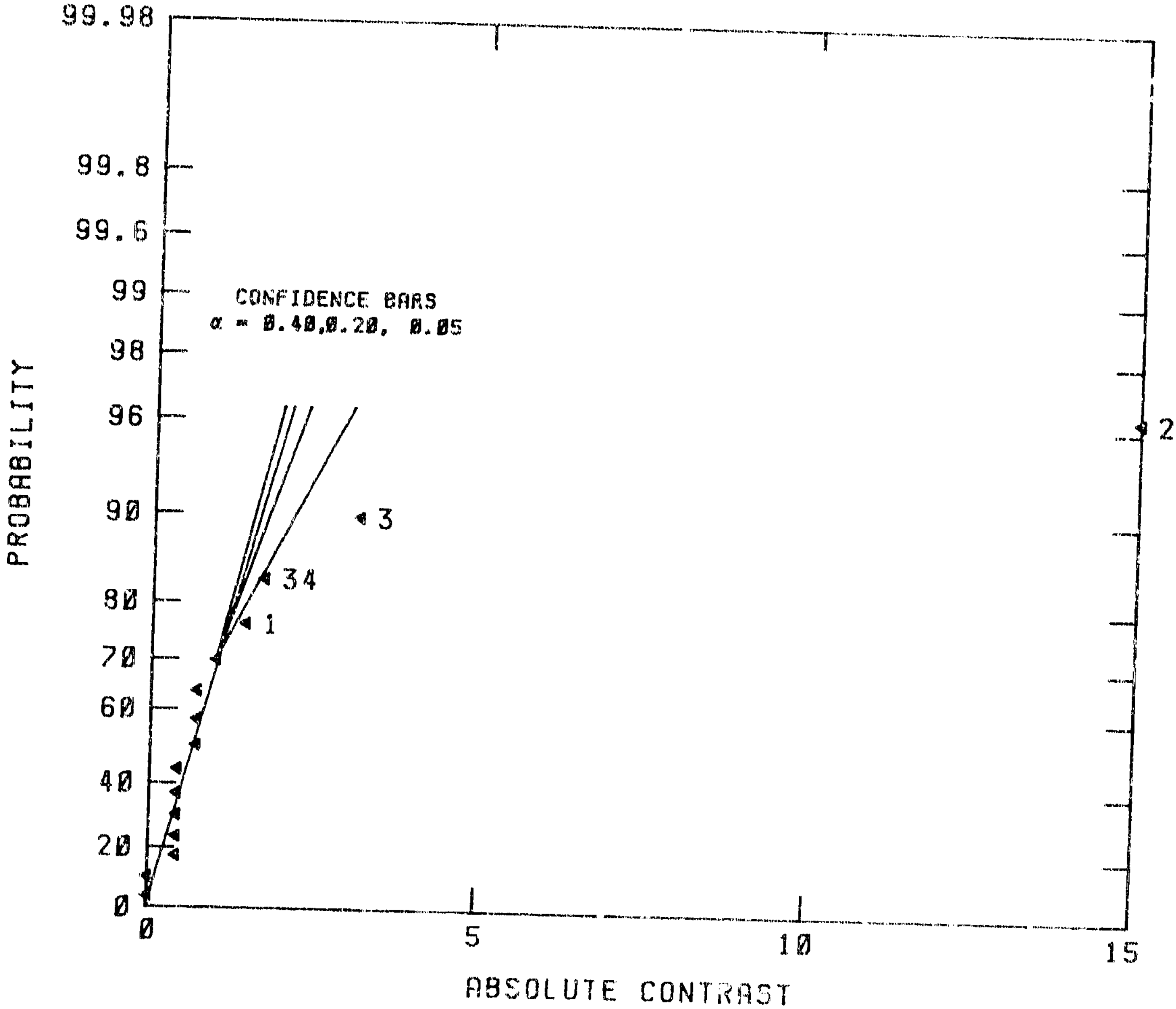

FIGURE L-12. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATION RATE OF 2 MM DIA DROPS DEPOSITED ON OAK LEAVES FOR 3 HR AT 80 DEG F AND 42% RH

TABLE L-26. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED FOR 6 HR ONOAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD	AVG EFFECTS	SUM OF SQUARES
1	MEAN	9	12.1	-
2	1	10	1.8	12.25
3	2	15	6	144
4	12	18	.5	1
5	3	9	-1.2	6.25
6	13	10	-.2	.25
7	23	14	0	0
8	123	17	0	0
9	4	9	-1.2	6.25
10	14	11	-.2	.25
11	24	14	-.5	1
12	124	16	-.5	1
13	34	7	-.7	2.25
14	134	8	-.2	.25
15	234	13	.5	1
16	1234	14	0	0
			TOTAL =	175.75

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

TABLE L-27. RANKED STANDARDIZED MAGNITUDE OF EFFECTS AVERAGE EVAPORATION RATE (MMG/MIN) FOR DROPLET (2 MM DIA) DEPOSITED FOR 6 HR ONOAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	2	6	96.67	8.57	98.33
14	1	1.8	90	2.57	95
13	4	1.2	83.33	1.71	91.67
12	3	1.2	76.67	1.71	88.33
11	34	.7	70	1	85
10	234	.5	63.33	.71	81.67
9	124	.5	56.67	.71	78.33
8	24	.5	50	.71	75
7	12	.5	43.33	.71	71.67
6	134	.2	36.67	.29	68.33
5	14	.2	30	.29	65
4	13	.2	23.33	.29	61.67
3	1234	0	16.67	0	58.33
2	123	0	10	0	55
1	23	0	3.33	0	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

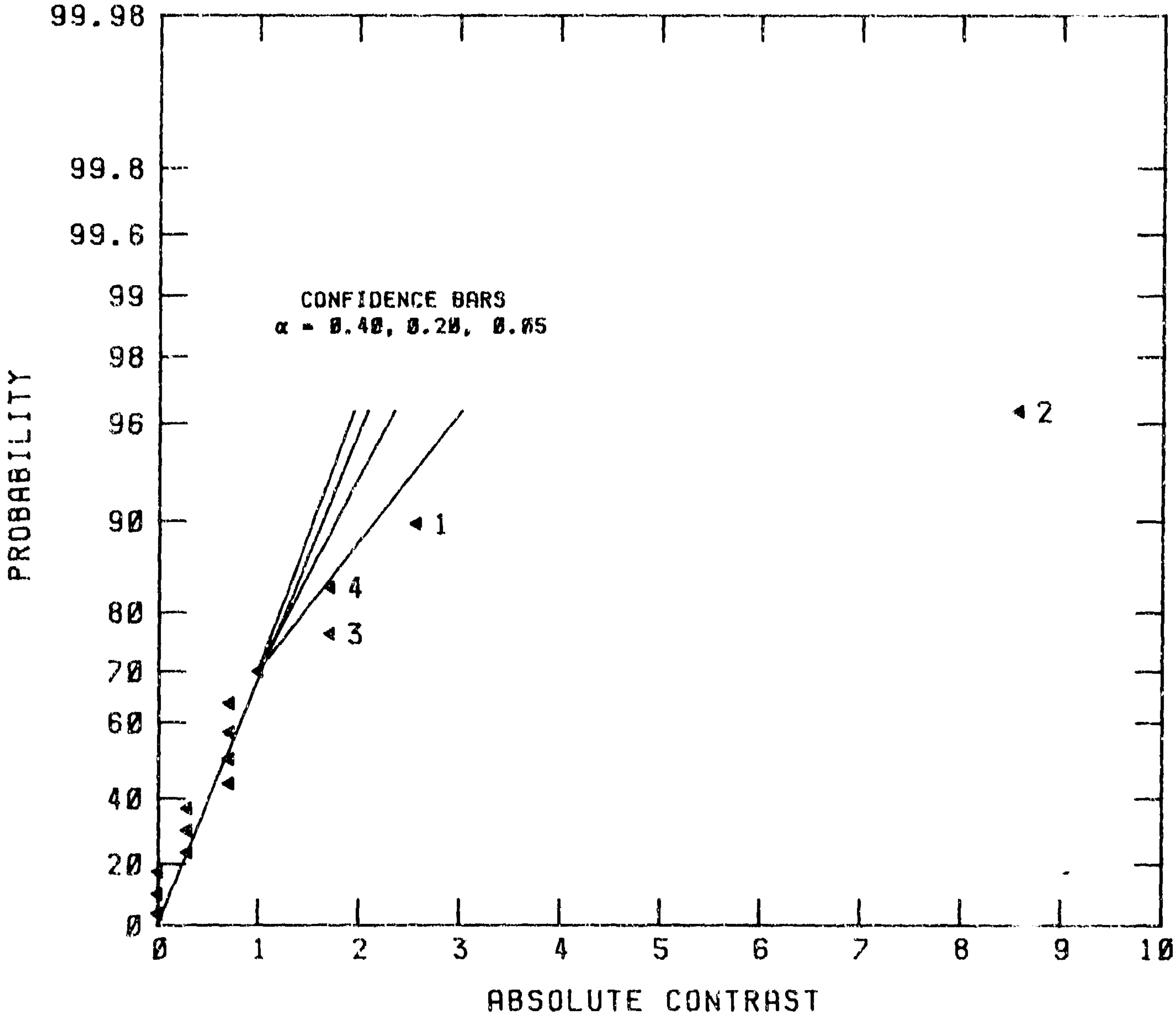

FIGURE L-13. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT AVERAGE EVAPORATON RATE OF 2 MM DIA DROPS DEPOSITED ON OAK LEAVES FOR 6 HR AT 80 DEG F AND 42% RH

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APPENDIX M

ANOVA TABLES OF 2^4 FACTORIAL EXPERIMENTS ON DROPLET EVAPORATION CHARACTERISTICS

TABLE M-1. ANOVA Table of 2^4 Experiment No. 1 - Half-Life Droplet Contamination Deposited on Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	2,002.562	1	2,002.562	7.285 **
2 Wind Speed	127,985.063	1	127,985.063	465.633 ****
3 Leaf Surface	20,952.562	1	20,952.562	76.229 ****
4 Leaf Type	2,575.562	1	2,575.562	9.370 **
1x2	95.0625	1	95.0625	0.346
1x3	105.0625	1	105.0625	0.382
1x4	351.5625	1	351.5625	1.279
2x3	2,093.0625	1	2,093.0625	7.615 **
2x4	390.0625	1	390.0625	1.419
3x4	162.5625	1	162.5625	0.591
1x2x3	22.5625	1		
1x2x4	33.0625	1		
1x3x4	18.0625	1		
2x3x4	1,278.0625	1		
1x2x3x4	22.5625	1		
	1,374.3125	5	274.8625	

Total Sum of Squares = 158,087.438

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-2. ANOVA Table of 2^4 Experiment No. 2 - Half-Li e Droplet Contamination Deposited on Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	370.5625	1	370.5625	0.736
2 Wind Speed	138,942.5625	1	138,942.5625	276.029 ****
3 Leaf Surface	6,930.5625	1	6,930.5625	13.769 **
4 Leaf Condition	68.0625	1	68.0625	0.135
1x2	22.5625	1	22.5625	0.045
1x3	27.5625	1	27.5625	0.055
1x4	1,958.0625	1	1,958.0625	3.890
2x3	1,387.5625	1	1,387.5625	2.757
2x4	22.5626	1	22.5626	0.045
3x4	5,513.0625	1	5,513.0625	10.952 **
1x2x3	3.0625	1		
1x2x4	410.0625	1		
1x3x4	85.5625	1		
2x3x4	1,958.0625	1		
1x2x3x4	62.0625	1		
	2,516.8125	5	503.3625	

Total Sum of Squares = 158,087.438

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-3. ANOVA Table of 2^4 Experiment No. 1 - Average Evaporation Rate Over Half-life of Droplet Deposited on Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio	
1 Liquid Viscosity	0.25	1	0.25	0.10	
2 Wind Speed	870.25	1	870.25	348.10	****
3 Leaf Surface	169.00	1	169.00	67.60	****
4 Leaf Type	36.00	1	36.00	14.40	**
1x2	1.00	1	1.00	0.40	
1x3	2.25	1	2.25	0.90	
1x4	0.25	1	0.25	0.10	
2x3	42.25	1	42.25	16.90	***
2x4	6.25	1	6.25	2.50	
3x4	9.00	1	9.00	3.60	
1x2x3	1.000	1			
1x2x4	4.000	1			
1x3x4	0.250	1			
2x3x4	6.250	1			
1x2x3x4	1.000	1			
	15.5	5	2.5		

Total Sum of Squares = 1149

Critical Values:

**** $F_{1,5,0.999} = 47.18$

*** $F_{1,5,0.99} = 16.26$

** $F_{1,5,0.95} = 6.61$

* $F_{1,5,0.90} = 4.06$

$F_{1,5,0.75} = 1.69$

TABLE M-4. ANOVA Table of 2^4 Experiment No. 2 - Average Evaporation Rate Over Half-life of Droplet Deposited on Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	1.00	1	1.00	0.625
2 Wind Speed	676.00	1	676.00	422.5 ****
3 Leaf Surface	36.00	1	36.00	22.50 ***
4 Leaf Condition	1.00	1	1.00	0.625
1x2	1.00	1	1.00	0.625
1x3	1.00	1	1.00	0.625
1x4	4.00	1	4.00	2.5
2x3	9.00	1	9.00	5.625 *
2x4	1.00	1	1.00	0.625
3x4	16.00	1	16.00	10.0 **
1x2x3	1.00	1		
1x2x4	4.00	1		
1x3x4	1.00	1		
2x3x4	1.00	1		
1x2x3x4	1.00	1		
	8.0	5	1.6	

Total Sum of Squares = 754

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-5. ANOVA Table of 2^4 Experiment No. 1 - Total Percent of Droplet Contamination Recovered as Vapor From Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	39.0625	1	39.0625	10.965 **
2 Wind Speed	248.0625	1	248.0625	69.632 ****
3 Leaf Surface	7.5625	1	7.5625	2.123
4 Leaf Type	10.5625	1	10.5625	2.965
1x2	0.0625	1	0.0625	0.018
1x3	22.5625	1	22.5625	6.333 *
1x4	22.5625	1	22.5625	6.333 *
2x3	0.0625	1	0.0625	0.018
2x4	27.5625	1	27.5625	7.737 **
3x4	5.0625	1	5.0625	1.421
1x2x3	0.0625	1		
1x2x4	1.5625	1		
1x3x4	5.0625	1		
2x3x4	10.5625	1		
1x2x3x4	0.5625	1		
	17.8125	5	3.5625	

Total Sum of Squares = 400.9375

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-6. ANOVA Table of 2^4 Experiment No. 2 - Total Percent of Droplet Contamination Recovered as Vapor From Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	156.25	1	156.25	72.764 ****
2 Wind Speed	72.25	1	72.25	33.604 ***
3 Leaf Surface	1.0	1	1.0	0.465
4 Leaf Condition	121.0	1	121.0	56.279 ****
1x2	6.25	1	6.25	2.907
1x3	16.0	1	16.0	7.442 **
1x4	121.0	1	121.0	56.279 ****
2x3	1.0	1	1.0	0.465
2x4	4.0	1	4.0	1.860
3x4	0.25	1	0.25	0.116
1x2x3	1.0	1		
1x2x4	1.0	1		
1x3x4	2.25	1		
2x3x4	6.25	1		
1x2x3x4	0.25	1		
	10.750	5	2.15	

Total Sum of Squares = 509.75

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.0[illegible]

$F_{1,5,0.75}$ = 1.69

TABLE M-7. ANOVA Table of 2^4 Experiment No. 1 - Life Time of Droplet Contamination on Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	3,906.25	1	3,906.25	0.30[illegible]
2 Wind Speed	1,265,625.00	1	1,265,625.00	99.812 ****
3 Leaf Surface	57,600.00	1	57,600.00	4.543 *
4 Leaf Type	14,400.00	1	14,400.00	1.136
1x2	3,306.25	1	3,306.25	0.261
1x3	15,006.25	1	15,006.25	1.183
1x4	1,056.25	1	1,056.25	0.083
2x3	2,500.00	1	2,500.00	0.197
2x4	19,600.00	1	19,600.00	1.546
3x4	34,225.00	1	34,225.00	2.699
1x2x3	7656.25	1		
1x2x4	756.25	1		
1x3x4	3306.25	1		
2x3x4	50,625.00	1		
1x2x3x4	1,056.25	1		
	63,400.0	5	12,680.0	

Total Sum of Squares = 1,480,625

Critical Values:

**** $F_{1,5,0.999}$ = 47.16

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-8. ANOVA Table of 2^4 Experiment No. 2 - Life Time of Droplet Contamination on Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	5,814.0625	1	5,814.0625	0.707
2 Wind Speed	1,825,876.56	1	1,825,876.56	221.949 ****
3 Leaf Surface	31,951.5625	1	31,951.5625	3.884
4 Leaf Condition	68,251.5625	1	68,251.5625	8.296 **
1x2	1,314.0625	1	1,314.0625	0.160
1x3	13,514.0625	1	13,514.0625	1.643
1x4	2,139.0625	1	2,139.0625	0.260
2x3	12,939.0625	1	12,939.0625	1.573
2x4	7,439.0625	1	7,439.0625	0.904
3x4	60,639.0625	1	60,639.0625	7.371 **
1x2x3	264.0625	1		
1x2x4	39.0625	1		
1x3x4	4064.0625	1		
2x3x4	26,001.5625	1		
1x2x3x4	10,764.0625	1		
	41,132.8125	5	8,256.5625	

Total Sum of Squares = 2,071,010.94

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-9. ANOVA Table of 2^4 Experiment No. 1 - Average Evaporation Rate Over Life Time of Droplet Contamination on Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	4.0	1	4.0	10.0 **
2 Wind Speed	256.0	1	256.0	640.0 ****
3 Leaf Surface	12.25	1	12.25	30.625 ***
4 Leaf Type	0.0	1	0.0	0.0
1x2	1.0	1	1.0	0.4
1x3	0.25	1	0.25	0.625
1x4	0.0	1	0.0	0.0
2x3	6.25	1	6.25	15.625 **
2x4	0.0	1	0.0	0.0
3x4	0.25	1	0.25	0.625
1x2x3	0.25	1		
1x2x4	1.00	1		
1x3x4	0.25	1		
2x3x4	0.25	1		
1x2x3x4	0.25	1		
	2.0	5	0.4	

Total Sum of Squares = 282

Critical Values:

**** $F_{1,5,0.999} = 47.18$

*** $F_{1,5,0.99} = 16.26$

** $F_{1,5,0.95} = 6.61$

* $F_{1,5,0.90} = 4.06$

$F_{1,5,0.75} = 1.69$

TABLE M-10. ANOVA Table of 2^4 Experiment No. 2 - Average Evaporation Rate Over Life Time of Droplet Contamination on Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	5.0625	1	5.0625	10.946 **
2 Wind Speed	232.5625	1	232.5625	502.838 ****
3 Leaf Surface	5.0526	1	5.0526	10.946 ***
4 Leaf Condition	3.0625	1	3.0625	6.622 **
1x2	0.0625	1	0.0625	0.135
1x3	0.5625	1	0.5625	1.216
1x4	0.0625	1	0.0625	0.135
2x3	1.5625	1	1.5625	3.378
2x4	0.5625	1	0.5625	1.216
3x4	3.0625	1	3.0625	6.622 **
1x2x3	0.5625	1		
1x2x4	0.0625	1		
1x3x4	0.5625	1		
2x3x4	0.5625	1		
1x2x3x4	0.5625	1		
	2.315	5	0.4625	

Total Sum of Squares = 253.9375

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-11. ANOVA Table of 2^4 Experiment No. 1 - Percent Of Droplet Contamination Recovered as Vapor After 1 Hr from Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	36.0	1	36.0	7.579 **
2 Wind Speed	841.0	1	841.0	177.053 ****
3 Leaf Surface	210.25	1	210.25	44.263 ***
4 Leaf Type	30.25	1	30.25	6.368 *
1x2	6.25	1	6.25	1.316
1x3	16.0	1	16.0	3.368
1x4	1.0	1	1.0	0.210
2x3	36.0	1	36.0	7.579 **
2x4	9.0	1	9.0	1.895
3x4	6.25	1	6.25	1.316
1x2x3	6.25	1		
1x2x4	0.25	1		
1x3x4	1.0	1		
2x3x4	16.0	1		
1x2x3x4	0.25	1		
	23.75	5	4.75	

Total Sum of Squares = 1215.75

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-12. ANOVA Table of 2^4 Experiment No. 2 - Percent Of Droplet Contamination Recovered as Vapor After 1 Hr from Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	10.5625	1	10.5625	4.122 *
2 Wind Speed	663.0625	1	663.0625	258.756 ****
3 Leaf Surface	45.5625	1	45.5625	17.780 ***
4 Leaf Condition	10.5625	1	10.5625	4.122 *
1x2	5.0625	1	5.0625	1.976
1x3	5.0625	1	5.0625	1.976
1x4	14.0625	1	14.0625	5.487 *
2x3	3.0625	1	3.0625	1.195
2x4	0.0625	1	0.0625	0.024
3x4	27.5625	1	27.5625	10.756 **
1x2x3	1.5625	1		
1x2x4	0.5625	1		
1x3x4	7.5625	1		
2x3x4	0.0625	1		
1x2x3x4	3.0625	1		
	12.8125	5	2.5625	

Total Sum of Squares = 797.4375

Critical Values:

**** $F_{1,5,0.999} = 47.18$

*** $F_{1,5,0.99} = 16.26$

** $F_{1,5,0.95} = 6.61$

* $F_{1,5,0.90} = 4.06$

$F_{1,5,0.75} = 1.69$

TABLE M-13. ANOVA Table of 2^4 Experiment No. 1 - Percent Of Droplet Contamination Recovered as Vapor After 2 Hr from Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	64.0	1	64.0	7.950 **
2 Wind Speed	2450.25	1	2450.25	304.379 ****
3 Leaf Surface	506.25	1	506.25	62.888 ****
4 Leaf Type	56.25	1	56.25	6.988 **
1x2	9.0	1	9.0	1.118
1x3	16.0	1	16.0	1.988
1x4	9.0	1	9.0	1.118
2x3	56.25	1	56.25	6.988 **
2x4	5.25	1	6.25	0.776
3x4	12.25	1	12.25	1.522
1x2x3	4.0	1		
1x2x4	1.0	1		
1x3x4	4.0	1		
2x3x4	30.25	1		
1x2x3x4	1.0	1		
	40.25	5	8.05	

Total Sum of Squares = 3225.75

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-14. ANOVA Table of 2^4 Experiment No. 2 - Percent Of Droplet Contamination Recovered as Vapor After 2 Hr from Oak Leaf Surface.

Source		Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1	Liquid Viscosity	30.25	1	30.25	8.288 **
2	Wind Speed	2116.0	1	2116.0	579.726 ****
3	Leaf Surface	110.25	1	110.25	30.205 ***
4	Leaf Condition	20.25	1	20.25	5.548 *
1x2		9.0	1	9.0	2.466
1x3		6.25	1	6.25	1.712
1x4		30.25	1	30.25	8.288 **
2x3		4.0	1	4.0	1.096
2x4		1.0	1	1.0	0.274
3x4		72.75	1	72.75	19.794 ***
1x2x3		1.0	1		
1x2x4		1.0	1		
1x3x4		12.25	1		
2x3x4		0.0	1		
1x2x3x4		4.0	1		
		18.25	5	3.65	

Total Sum of Squares = 2417.755

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-15. ANOVA Table of 2^4 Experiment No. 1 - Percent Of Droplet Contamination Recovered as Vapor After 3 Hr from Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	72.25	1	72.25	7.940 **
2 Wind Speed	3906.25	1	3906.25	429.258 ****
3 Leaf Surface	625.0	1	625.0	68.681 ****
4 Leaf Type	64.0	1	64.0	7.032 **
1x2	1.0	1	1.0	0.110
1x3	6.25	1	6.25	0.687
1x4	20.25	1	20.25	2.225
2x3	30.25	1	30.25	3.324
2x4	0.25	1	0.25	0.027
3x4	1.0	1	1.0	0.110
1x2x3	1.0	1		
1x2x4	4.0	1		
1x3x4	6.25	1		
2x3x4	30.25	1		
1x2x3x4	4.0	1		
	45.50	5	9.1	

Total Sum of Squares = 4772.0

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-16. ANOVA Table of 2^4 Experiment No. 2 - Percent Of Droplet Contamination Recovered as Vapor After 3 Hr from Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	30.25	1	30.25	7.857 **
2 Wind Speed	3721.0	1	3721.0	966.493 ****
3 Leaf Surface	182.25	1	182.25	47.338 ****
4 Leaf Condition	12.25	1	12.25	3.182
1x2	4.0	1	4.0	1.039
1x3	2.25	1	2.25	0.584
1x4	56.25	1	56.25	14.610 **
2x3	1.0	1	1.0	0.260
2x4	1.0	1	1.0	0.260
3x4	110.25	1	110.25	28.636 ***
1x2x3	1.0	1		
1x2x4	1.0	1		
1x3x4	12.25	1		
2x3x4	1.0	1		
1x2x3x4	4.0	1		
	19.25	5	3.85	

Total Sum of Squares = 4129.755

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

** $F_{1,5,0.90}$ = 4.06

* $F_{1,5,0.75}$ = 1.69

TABLE M-17. ANOVA Table of 2^4 Experiment No. 1 - Percent Of Droplet Contamination Recovered as Vapor After 6 Hr from Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	0.0625	1	0.0625	0.062
2 Wind Speed	3751.5625	1	3751.5625	639.925 ****
3 Leaf Surface	232.5625	1	232.5625	39.670 ***
4 Leaf Type	10.5625	1	10.5625	1.802
1x2	27.5625	1	27.5625	4.701 *
1x3	5.0625	1	5.0625	0.864
1x4	18.0625	1	18.0625	3.081
2x3	45.5625	1	45.5625	7.771 **
2x4	7.5625	1	7.5625	1.290
3x4	7.5625	1	7.5625	1.290
1x2x3	10.5625	1		
1x2x4	1.5625	1		
1x3x4	5.0625	1		
2x3x4	10.5625	1		
1x2x3x4	1.5625	1		
	29.3125	5	5.8625	

Total Sum of Squares = 4135.4375

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-18. ANOVA Table of 2^4 Experiment No. 2 - Percent Of Droplet Contamination Recovered as Vapor After 6 Hr from Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	14.0625	1	14.0625	2.246
2 Wind Speed	4389.0625	1	4389.0625	700.848 ****
3 Leaf Surface	105.0625	1	105.0625	16.776 ***
4 Leaf Condition	5.0625	1	5.0625	0.808
1x2	22.5625	1	22.5625	3.603
1x3	0.0625	1	0.0625	0.010
1x4	60.0625	1	60.0625	9.591 **
2x3	22.5625	1	22.5625	3.603
2x4	5.0625	1	5.0625	0.808
3x4	60.0625	1	60.0625	9.591 **
1x2x3	3.0625	1		
1x2x4	0.5625	1		
1x3x4	0.0625	1		
2x3x4	27.5625	1		
1x2x3x4	0.0625	1		
	31.3125	5	6.2625	

Total Sum of Squares = 4714.9375

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-19. ANOVA Table of 2^4 Experiment No. 1 - Average Evaporation Rate After 1 Hr For 2.2 mm (Dia.) Droplet Deposited on Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	3.0625	1	3.0625	0.860
2 Wind Speed	885.0625	1	885.0625	248.439 ****
3 Leaf Surface	217.5625	1	217.5625	61.070 ****
4 Leaf Type	39.0625	1	39.0625	10.965 **
1x2	0.5625	1	0.5625	0.158
1x3	3.0625	1	3.0625	0.860
1x4	0.5625	1	0.5625	0.158
2x3	22.5625	1	22.5625	6.333 *
2x4	5.0525	1	5.0525	1.421
3x4	10.5625	1	10.5625	2.965
1x2x3	0.5626	1		
1x2x4	3.0625	1		
1x3x4	0.5625	1		
2x3x4	10.5625	1		
1x2x3x4	3.0625	1		
	17.8125	5	3.5625	

Total Sum of Squares = 1204.9375

Critical Values

**** $F_{1,5,0.995}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-20. ANOVA Table of 2^4 Experiment No. 2 - Average Evaporation Rate After 1 Hr For 2.2 mm (Dia.) Droplet Deposited on Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	0.0625	1	0.0625	0.038
2 Wind Speed	715.5625	1	715.5625	430.414 ****
3 Leaf Surface	52.5625	1	52.5625	31.616 ***
4 Leaf Condition	1.5625	1	1.5625	0.940
1x2	0.5625	1	0.5625	0.338
1x3	1.5625	1	1.5625	0.940
1x4	5.0625	1	5.0625	3.045
2x3	3.0625	1	3.0625	1.842
2x4	0.5625	1	0.5625	0.338
3x4	18.0625	1	18.0625	10.865 **
1x2x3	3.0625	1		
1x2x4	3.0625	1		
1x3x4	1.5625	1		
2x3x4	0.0625	1		
1x2x3x4	0.5625	1		
	8.3125	5	1.6625	

Total Sum of Squares = 806.9375

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-21. ANOVA Table of 2^4 Experiment No. 1 - Average Evaporation Rate After 2 Hr For 2.2 mm (Dia.) Droplet Deposited on Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	0.0625	1	0.0625	0.035
2 Wind Speed	663.0625	1	663.0625	376.206 ****
3 Leaf Surface	126.5625	1	126.5625	71.805 ****
4 Leaf Type	22.5625	1	22.5625	12.801 **
1x2	0.0625	1	0.0625	0.035
1x3	0.5625	1	0.5625	0.319
1x4	0.5625	1	0.5625	0.319
2x3	7.5625	1	7.5625	4.291 *
2x4	1.5625	1	1.5625	0.886
3x4	3.0625	1	3.0625	1.738
1x2x3	0.0625	1		
1x2x4	5.0625	1		
1x3x4	0.5625	1		
2x3x4	1.5625	1		
1x2x3x4	1.5625	1		
	8.8125	5	1.7625	

Total Sum of Squares = 834.4375

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-22. ANOVA Table of 2^4 Experiment No. 2 - Average Evaporation Rate After 2 Hr For 2.2 mm (Dia.) Droplet Deposited on Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	1.5625	1	1.5625	1.623
2 Wind Speed	612.5625	1	612.5625	636.429 ****
3 Leaf Surface	33.0625	1	33.0625	34.351 ***
4 Leaf Condition	0.0625	1	0.0625	0.065
1x2	0.5625	1	0.5625	0.584
1x3	0.5625	1	0.5625	0.584
1x4	3.0625	1	3.0625	3.182
2x3	3.0625	1	3.0625	3.182
2x4	0.0625	1	0.0625	0.065
3x4	14.0625	1	14.0625	14.610 **
1x2x3	0.5625	1		
1x2x4	3.0525	1		
1x3x4	0.5625	1		
2x3x4	0.0625	1		
1x2x3x4	0.5625	1		
	4.8125	5	0.9625	

Total Sum of Squares = 673.4375

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-23. ANOVA Table of 2^4 Experiment No. 1 - Average Evaporation Rate After 3 Hr For 2.2 mm (Dia.) Droplet Deposited on Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	1.5625	1	1.5625	0.940
2 Wind Speed	451.5625	1	451.5625	271.616 ****
3 Leaf Surface	60.0625	1	60.0625	36.128 ***
4 Leaf Type	14.0625	1	14.0625	8.459 **
1x2	0.5625	1	0.5625	0.338
1x3	0.0625	1	0.0625	0.038
1x4	0.0625	1	0.0625	0.038
2x3	1.5625	1	1.5625	0.940
2x4	0.0625	1	0.0625	0.038
3x4	0.5625	1	0.5625	1.338
1x2x3	0.5625	1		
1x2x4	3.0625	1		
1x3x4	1.5625	1		
2x3x4	0.0625	1		
1x2x3x4	3.0625	1		
	8.3125	5	1.6625	

Total Sum of Squares = 538.4375

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-24. ANOVA Table of 2^4 Experiment No. 2 - Average Evaporation Rate After 3 Hr For 2.2 mm (Dia.) Droplet Deposited on Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	4.0	1	4.0	10.0 **
2 Wind Speed	441.0	1	441.0	1102.5 ****
3 Leaf Surface	20.25	1	20.25	50.625 ****
4 Leaf Condition	1.0	1	1.0	2.5
1x2	0.0	1	0.0	0.0
1x3	0.25	1	0.25	0.625
1x4	1.0	1	1.0	2.5
2x3	2.25	1	2.25	5.625 *
2x4	0.0	1	0.0	0.0
3x4	6.25	1	6.25	15.625 **
1x2x3	0.25	1		
1x2x4	1.0	1		
1x3x4	0.25	1		
2x3x4	0.25	1		
1x2x3x4	0.25	1		
	2.0	5	0.40	

Total Sum of Squares = 478.0

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-25. ANOVA Table of 2^4 Experiment No. 1 - Average Evaporation Rate After 6 Hr For 2.2 mm (Dia.) Droplet Deposited on Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	9.0	1	9.0	13.846 **
2 Wind Speed	110.25	1	110.25	169.615 ****
3 Leaf Surface	12.25	1	12.25	18.846 ***
4 Leaf Type	2.25	1	2.25	3.462
1x2	1.0	1	1.0	1.538
1x3	1.0	1	1.0	1.538
1x4	0.0	1	0.0	0.000
2x3	2.25	1	2.25	3.462
2x4	0.25	1	0.25	0.385
3x4	0.25	1	0.25	0.385
1x2x3	1.0	1		
1x2x4	1.0	1		
1x3x4	0.0	1		
2x3x4	0.25	1		
1x2x3x4	1.0	1		
	3.25	5	0.65	

Total Sum of Squares = 141.75

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE M-26. ANOVA Table of 2^4 Experiment No. 2 - Average Evaporation Rate After 6 Hr For 2.2 mm (Dia.) Droplet Deposited on Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	12.25	1	12.25	27.222 ***
2 Wind Speed	144.0	1	144.0	320.0 ****
3 Leaf Surface	6.25	1	6.25	13.895 **
4 Leaf Condition	6.25	1	6.25	13.889 **
1x2	1.0	1	1.0	2.222
1x3	0.25	1	0.25	0.556
1x4	0.25	1	0.25	0.556
2x3	0.0	1	0.0	0.0
2x4	1.0	1	1.0	2.222
3x4	2.25	1	2.25	5.0 *
1x2x3	0.0	1		
1x2x4	1.0	1		
1x3x4	0.25	1		
2x3x4	1.0	1		
1x2x3x4	0.0	1		
	2.25	5	0.45	

Total Sum of Squares = 175.75

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

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APPENDIX N

FACTORIAL ANALYSIS AND HALF NORMAL PROBABILITY PLOTS OF DROPLET SPREAD FACTOR RESULTS

TABLE N-1. THE DESIGN MATRIX FOR THE FACTORIAL EXPERIMENT AVERAGE SPREAD FACTOR OF DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	VARIABLES 1	2	3	4	CONTRAST CONFOUNDING
1	−	[illegible]	−	−	MEAN
2	+	−	−	−	1
3	−	+	−	−	2
4	+	+	−	−	12
5	−	−	+	−	3
6	+	−	[illegible]	−	13
7	−	+	[illegible]	−	23
8	+	+	+	−	123
9	−	−	−	+	4
10	+	−	−	+	14
11	−	+	−	[illegible]	24
12	+	+	−	+	124
13	−	−	+	+	34
14	+	−	+	+	134
15	−	+	+	+	234
16	+	+	+	+	1234

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(−)100 CP
2:	WIND SPEED	(+)11 MPH	(−)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(−)TOP
4:	LEAF TYPE	(+)OAK	(−)HICKORY

TABLE N-2. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE SPREAD FACTOR OF DROPLET (2 MM DIA) DEPOSITED ON LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	CONTRAST	YIELD*	AVG EFFECTS	SUM OF SQUARES
1	MEAN	247	222.6	-
2	1	267	-8	256
3	2	272	-4.7	90.25
4	12	280	2	16
5	3	189	-68.5	18769
6	13	191	.8	2.25
7	23	191	3	36
8	123	185	-4.7	90.25
9	4	290	-10.2	420.25
10	14	239	-14	784
11	24	236	-13.2	702.25
12	124	224	7	196
13	34	194	9	324
14	134	183	8.8	306.25
15	234	194	13.5	729
16	1234	180	-5.7	132.25
			TOTAL =	22853.75

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

* SPREAD FACTOR X 100

TABLE N-3. RANKED STANDARDIZED MAGNITUDE OF EFFECTS
AVERAGE SPREAD FACTOR OF DROPLET (2 MM DIA) DEPOSITED
ON LEAF SURFACE AT 60 DEG [illegible] AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	3	68.5	96.67	6.72	98.33
14	14	14	90	1.37	95
13	234	13.5	83.33	1.32	91.67
12	24	13.2	76.67	1.29	88.33
11	4	10.2	70	1	85
10	34	9	63.33	.88	81.67
9	134	8.8	56.67	.86	78.33
8	1	8	50	.78	75
7	124	7	43.33	.69	71.67
6	1234	5.7	36.67	.56	68.33
5	123	4.7	30	.46	65
4	2	4.7	23.33	.46	61.67
3	23	3	16.67	.2[illegible]	58.33
2	12	2	10	.[illegible]	55
1	13	.8	3.33	.08	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF TYPE	(+)OAK	(-)HICKORY

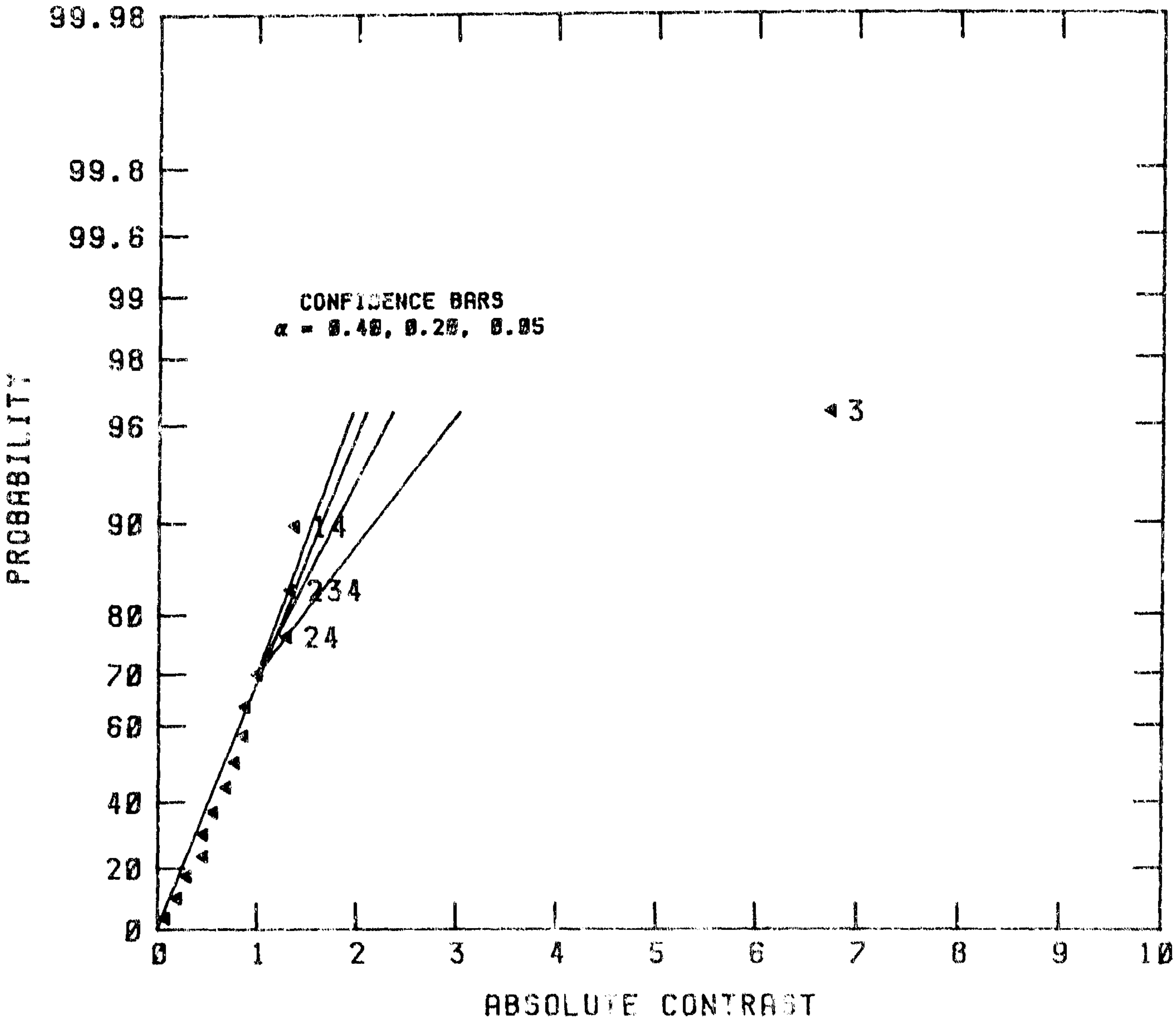

FIGURE N-1. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT SPREAD FACTOR OF 2 MM DIAMETER DROPS DEPOSITED ON LEAF SURFACE AT 80 DEG F AND 42% RH

TABLE N-4. THE DESIGN MATRIX FOR THE FACTORIAL EXPERIMENT AVERAGE SPREAD FACTOR OF DROPLET (2 MM DIA) DEPOSITED ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

TEST	VARIABLES 1	2	3	4	CONTRAST CONFOUNDING
1	–	–	–	–	MEAN
2	+	–	–	–	1
3	–	+	–	–	2
4	+	+	–	–	12
5	–	–	+	–	3
6	+	–	+	–	13
7	–	+	+	–	23
8	+	+	+	–	123
9	–	–	–	+	4
10	+	–	–	+	14
11	–	+	–	+	24
12	+	+	–	+	124
13	–	–	+	+	34
14	+	–	+	+	134
15	–	+	+	+	234
16	+	+	+	+	1234

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(–)100 CP
2:	WIND SPEED	(+)10 MPH	(–)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(–)TOP
4:	LEAF CONDITION	(+)GREEN	(–)RED

TABLE N-5. ESTIMATES OF AVERAGE EFFECTS AND SUM OF SQUARES AVERAGE SPREAD FACTOR OF DROPLET (2 MM DIA) DEPOSITED ON OAK LEAF SURFACE AT 60 DEG F AND 32% RH

TEST	CONTRAST	YIELD *	AVG EFFECTS	SUM OF SQUARES
1	MEAN	197	202.4	--
2	1	199	-10.5	441
3	2	186	-9	324
4	12	199	4.8	90.25
5	3	177	-37.7	5700.25
6	13	176	1.5	9
7	23	187	11	484
8	123	177	-7.7	240.25
9	4	290	30.3	3660.25
10	14	239	-11.5	529
11	24	236	-9	324
12	124	224	4.3	72.25
13	34	154	-21.7	1892.25
14	134	183	8	256
15	234	194	5.5	121
16	1234	180	-2.7	30.25

TOTAL = 14173.75

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)2 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

* SPREAD FACTOR X 100

TABLE N-6. RANKED STANDARDIZED MAGNITUDE OF EFFECTS
AVERAGE SPREAD FACTOR OF DROPLET (2 MM DIA) DEPOSITED
ON OAK LEAF SURFACE AT 60 DEG F AND 42% RH

RANK	CONTRAST	MAG OF EFFECT	PROB	STD MAG	HALF NORMAL
15	3	37.7	96.67	3.43	98.33
14	4	30.3	90	2.75	95
13	34	21.7	83.33	1.97	91.67
12	14	11.5	76.67	1.05	88.33
11	23	11	70	1	85
10	1	10.5	63.33	.95	81.67
9	24	9	56.67	.82	78.33
8	2	9	50	.82	75
7	134	8	43.33	.73	71.67
6	123	7.7	36.67	.7	68.33
5	234	5.5	30	.5	65
4	12	4.8	23.33	.44	61.67
3	124	4.3	16.67	.39	58.33
2	1234	2.7	10	.25	55
1	13	1.5	3.33	.14	51.67

PROB = ((R(I)-.5)/R(MAX))*100% WHERE R(I) IS THE RANK.

STANDARDIZED MAGNITUDE = ABSOLUTE VALUE / U WHERE U IS DEFINED AS THE MAGNITUDE OF THE CONTRAST NEAREST 68.3 PERCENTILE.

HALF NORMAL = (PROB+100%)/2

VARIABLE #'S AND IDENTITIES

1:	LIQUID VISCOSITY	(+)1000 CP	(-)100 CP
2:	WIND SPEED	(+)11 MPH	(-)3 MPH
3:	LEAF SURFACE	(+)BOTTOM	(-)TOP
4:	LEAF CONDITION	(+)GREEN	(-)RED

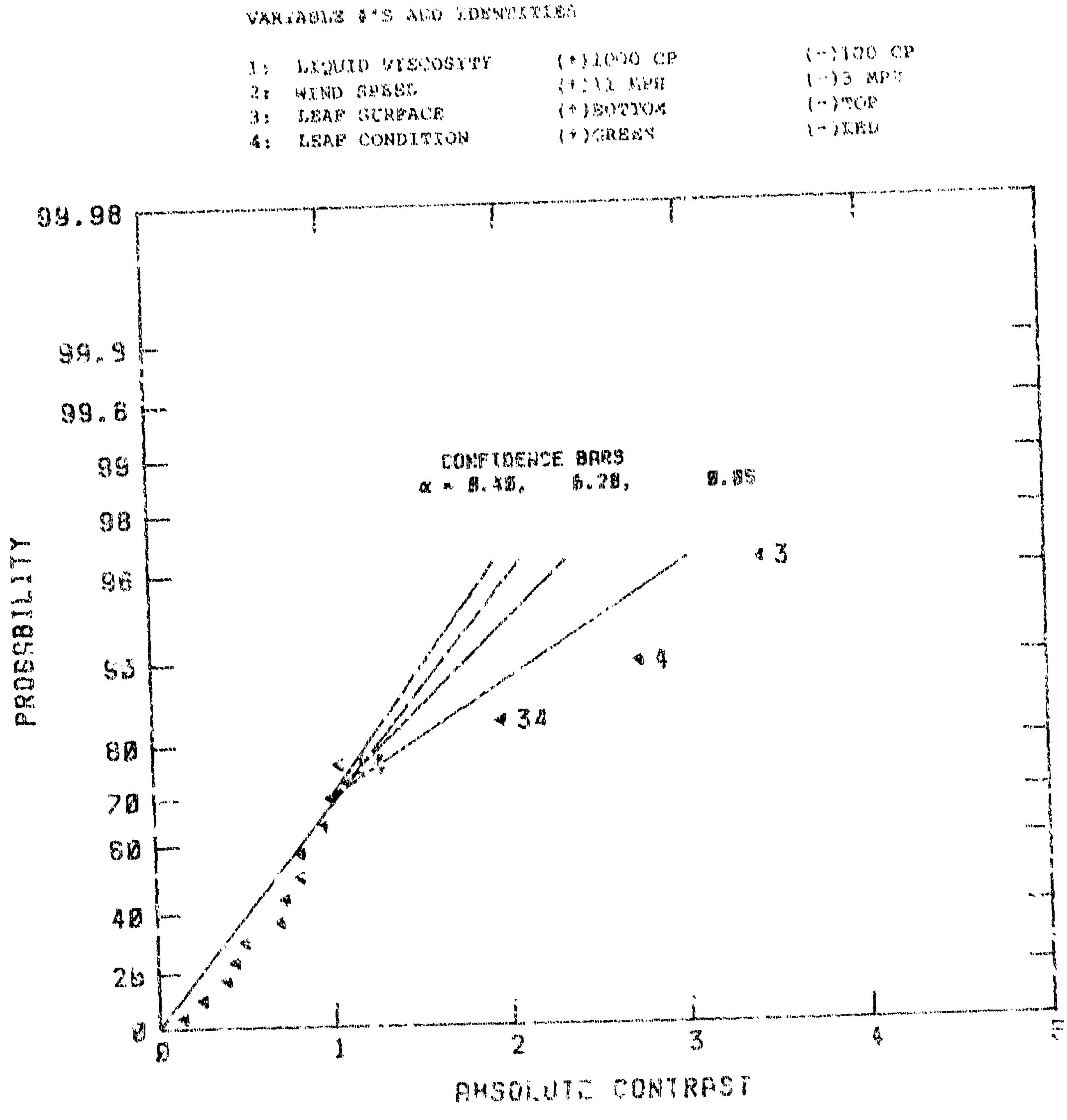

FIGURE N-7. HALF NORMAL PROBABILITY PLOT OF FACTORIAL EXPERIMENT SPREAD FACTOR OF 2 MM DIAMETER DROPS DEPOSITED ON DRY LEAF SURFACE AT 68 DEG F AND 42% RH

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APPENDIX O

ANOVA TABLES OF 2^4 FACTORIAL EXPERIMENTS
ON DROPLET SPREAD FACTOR RESULTS

TABLE O-1. ANOVA Table of 2^4 Experiment No. 1 - Average Spread Factor of Droplet (2 mm Dia.) Deposited on Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	256.0	1	256.0	0.880
2 Wind Speed	90.25	1	90.25	0.310
3 Leaf Surface	18,769.0	1	18,769.0	64.554 ****
4 Leaf Type	420.25	1	420.25	1.445
1x2	16.0	1	16.0	0.055
1x3	2.25	1	2.25	0.008
1x4	784.0	1	784.0	2.696
2x3	36.0	1	36.0	0.124
2x4	702.25	1	702.25	2.415
3x4	324.0	1	324.0	1.114
1x2x3	90.25	1		
1x2x4	196.0	1		
1x3x4	306.25	1		
2x3x4	729.0	1		
1x2x3x4	132.25	1		
	1,453.75	5	290.75	

Total Sum of Squares = 22853.75

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

TABLE O-2. ANOVA Table of 2^4 Experiment No. 2 - Average Spread Factor of Droplet (2 mm Dia.) Deposited on Oak Leaf Surface.

Source	Sum of Squares	Degrees of Freedom	Mean Square	Mean Square Ratio
1 Liquid Viscosity	441.0	1	441.0	1.517
2 Wind Speed	324.0	1	324.0	1.114
3 Leaf Surface	5,700.25	1	5,700.25	19.605 ***
4 Leaf Condition	3,660.25	1	3,660.25	12.590 **
1x2	90.25	1	90.25	0.310
1x3	9.0	1	9.0	0.031
1x4	529.0	1	529.0	1.819
2x3	484.0	1	484.0	1.665
2x4	324.25	1	324.25	1.114
3x4	1892.25	1	1892.25	6.508 *
1x2x3	240.25	1		
1x2x4	72.25	1		
1x3x4	256.0	1		
2x3x4	121.0	1		
1x2x3x4	30.25	1		
	719.75	5	143.95	

Total Sum of Squares = 14173.75

Critical Values:

**** $F_{1,5,0.999}$ = 47.18

*** $F_{1,5,0.99}$ = 16.26

** $F_{1,5,0.95}$ = 6.61

* $F_{1,5,0.90}$ = 4.06

$F_{1,5,0.75}$ = 1.69

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APPENDIX P

REGRESSION MODELS FOR PREDICTING HALF-LIFE OF DROPLETS DEPOSITED ON LEAF FOLIAGE

Table P-1. Model 1 Fit of Half-Life of OEM Droplet Deposited on Leaf Surface

SOURCE	DF	SS	MS
REGRESS.	2	148937.625	74468.812
RESIDUAL	13	9149.812	703.832
TOTAL	15	158087.437	

F(2,13) = 105.805 P = <.001

MULTIPLE CORRELATION = .9706

R-SQUARED = .9421 (.9332)

STANDARD ERROR = 26.530

VARIABLE	COEFFICIENT	T	S.E.	P	SR
B	-89.4375	-13.485	6.6325	<.001	.8096
C	36.1875	5.456	6.6325	<.001	.1325
CONSTANT	218.6875				

CASE #	ACTUAL	PREDICTED	RESIDUAL
1	246.000	271.938	-25.938
2	264.000	271.938	-7.938
3	84.000	93.063	-9.063
4	98.000	93.063	4.937
5	320.000	344.313	-24.313
6	332.000	344.313	-12.313
7	148.000	165.438	-17.438
8	156.000	165.438	-9.438
9	245.000	271.938	-26.938
10	287.000	271.938	15.063
11	100.000	93.063	6.937
12	136.000	93.063	42.937
13	367.000	344.313	22.688
14	404.000	344.313	59.688
15	150.000	165.438	-15.438
16	162.000	165.438	-3.438

RESIDUALS SUM = -4.76837158E-07

SERIAL CORRELATION, RESIDUALS = .2738

DURBIN-WATSON STATISTIC = 1.3782

Table P-2. Model 1B Fit of Half-Life of DEM Droplet Deposited on Leaf Surface.

SOURCE	DF	SS	MS
REGRESS.	5	155608.812	31121.762
RESIDUAL	10	2478.624	247.862
TOTAL	15	158087.437	

F(5,10) = 125.561 P = <.001

MULTIPLE CORRELATION = .9921

R-SQUARED = .9843 (.9765)

STANDARD ERROR = 15.744

VARIABLE	COEFFICIENT	T	S.E.	P	SR
B	-89.4375	-22.723	3.9359	<.001	.8096
C	36.1875	9.194	3.9359	<.001	.1325
A	11.1875	2.842	3.9359	.0169	.0127
D	12.6875	3.224	3.9359	.009	.0163
BC	-11.4375	-2.906	3.9359	.0152	.0132
CONSTANT	218.6875				

CASE #	ACTUAL	PREDICTED	RESIDUAL
1	246.000	236.625	9.375
2	264.000	259.000	5.000
3	84.000	80.625	3.375
4	98.000	103.000	-5.000
5	320.000	331.875	-11.875
6	332.000	354.250	-22.250
7	148.000	130.125	17.875
8	156.000	152.500	3.500
9	245.000	262.000	-17.000
10	287.000	284.375	2.625
11	100.000	106.000	-6.000
12	136.000	128.375	7.625
13	367.000	357.250	9.750
14	404.000	379.625	24.375
15	150.000	155.500	-5.500
16	162.000	177.875	-15.875

RESIDUALS SUM = -4.76837158E-07

SERIAL CORRELATION, RESIDUALS = .0606

DURBIN-WATSON STATISTIC = 1.7540

Table P-3. Model 2 Fit of Half-Life of DEM Droplet Deposited on Leaf Surface.

SOURCE	DF	SS	MS
REGRESS.	3	151386.187	50462.062
RESIDUAL	12	6373.749	531.146
TOTAL	15	157759.937	

F(3,12) = 95.006 P = <.001

MULTIPLE CORRELATION = .9796

R-SQUARED = .9596 (.9495)

STANDARD ERROR = 23.047

VARIABLE	COEFFICIENT	T	S.E.	P	SR
B	-93.1875	-16.174	5.7617	<.001	.8807
C	20.8125	3.612	5.7617	.003	.0439
CD	18.5625	3.222	5.7617	.007	.0349
CONSTANT	233.4375				

CASE #	ACTUAL	PREDICTED	RESIDUAL
1	339.000	324.375	14.625
2	315.000	324.375	-9.375
3	142.000	138.000	4.000
4	137.000	138.000	-1.000
5	341.000	328.875	12.125
6	315.000	328.875	-13.875
7	145.000	142.500	2.500
8	150.000	142.500	7.500
9	245.000	287.250	-42.250
10	287.000	287.250	-.250
11	100.000	100.875	-.875
12	136.000	100.875	35.125
13	367.000	366.000	1.000
14	404.000	366.000	38.000
15	150.000	179.625	-29.625
16	162.000	179.625	-17.625

RESIDUALS SUM = -3.57627869E-07

SERIAL CORRELATION, RESIDUALS = -.2049

DURBIN-WATSON STATISTIC = 2.3075

Table P-4. Comparison of Predictions of Three Regession Models.

Expected Droplet Half-life (min)	Predicted Droplet Half-Life Model 1	Model 2	Model 3
60	69 (+9)	62 (+2)	67 (+7)
120	126 (+6)	122 (+2)	125 (+5)
180	182 (+2)	181 (+1)	182 (+2)
240	239 (-1)	240 (0)	240 (0)
300	295 (-5)	299 (-1)	297 (-3)
360	352 (-8)	358 (-2)	355 (-5)
420	408 (-12)	417 (-3)	412 (-8)
480	465 (-15)	476 (-4)	470 (-10)

Model 1: $t_{\frac{1}{2}} = 218.6875 - 89.4375B + 36.1875C$

Model 1b: $t_{\frac{1}{2}} = 218.6875 - 89.4375B + 36.1875C + 11.1875A + 12.4375D - 11.4375BC$

Model 2: $t_{\frac{1}{2}} = 233.4375 - 93.1875B + 20.8125C + 18.5625CE$

Parameters:

A: Liquid Viscosity (100 cp = -1 & 1000 cp = +1)
B: Wind Speed (3 mph = -1 & 11 mph = +1)
C: Leaf Surface (Top = -1 & Bottom = +1)
D: Leaf Type (Shagbark Hickory = -1 & Northern Red Oak = +1)
E: Leaf Condition/Age (Red, October + -1 & Green, September = +1)

EVAPORATION EXPERIMENTS NO. 1 AND 2 SERIES 2**4 FACTORIAL EXPERIMENT
DIETHYLMALONATE DROPS 2 MM DIA., 100 AND 1000 CP LIQUID VISCOSITY
NOMINAL CONTAMINATION DENSITY 30 G/SQ METER ON OAK AND HICKORY LEAVES
WINDSPEED 3 AND 11 MPH, AIR TEMPERATURE 60 DEG F., RELATIVE HUMIDITY 42%

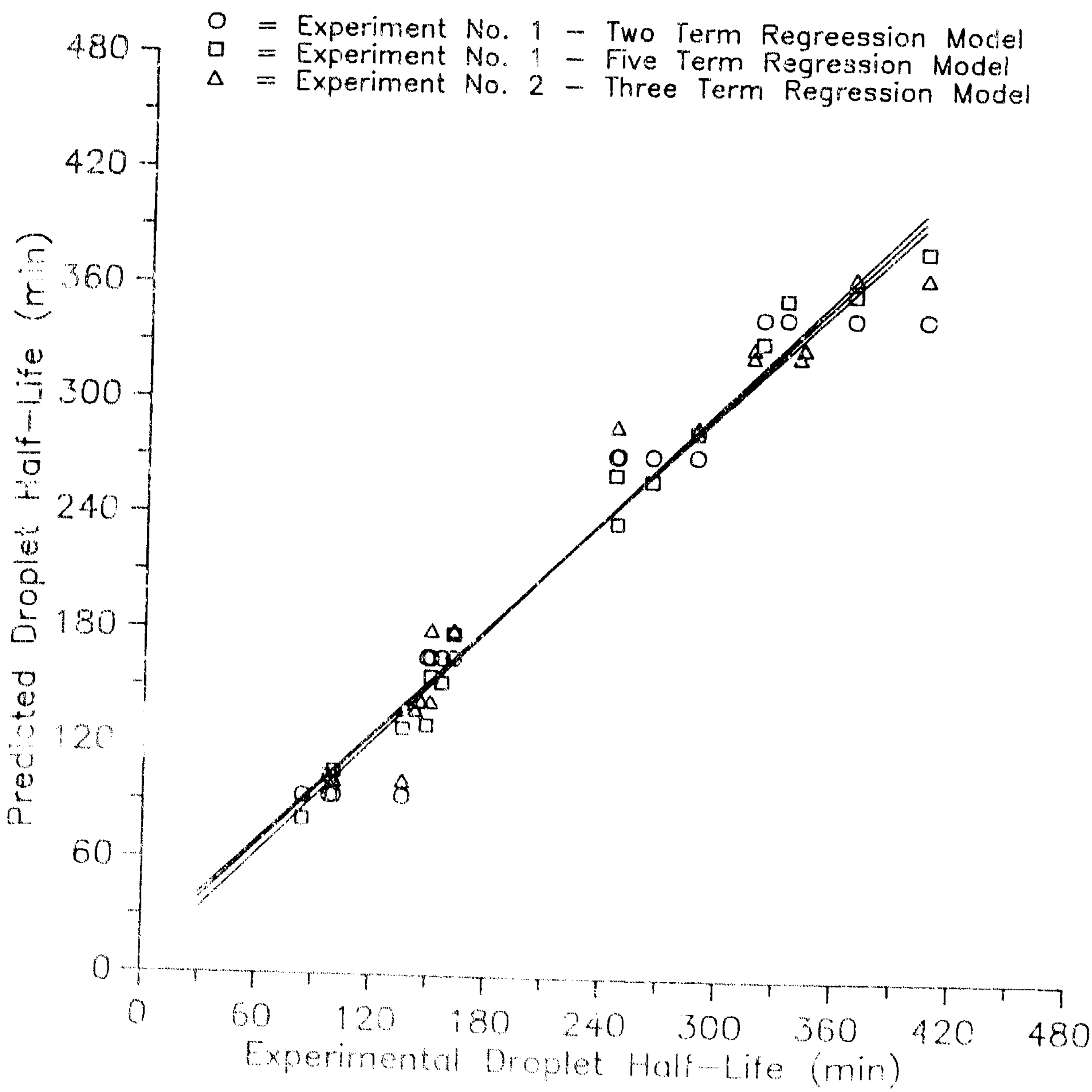

Figure P-1. Experimental versus Predicted Droplet Half-Life.

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